

Access DB# 137 006

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Anthony Green Examiner #: _____ Date: _____
 Art Unit: 1755 Phone Number 30 _____ Serial Number: 10/762,579
 Mail Box and Bldg/Room Location: Room 9C15 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Black Perylene-based pigment and process for producing same
 Inventors (please provide full names): Mizuguchi & Shino

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>XPL</u>	NA Sequence (#) _____	STN <u>\$ 879.05</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>5</u>	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: <u>10/5/04</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>30</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>170</u>	Other _____	Other (specify) _____



STIC Search Report

EIC 1700

STIC Database Tracking Number: 137006

TO: Anthony Green
Location: REM 9C15
Art Unit : 1755
November 5, 2004

Case Serial Number: 10/762579

From: Les Henderson
Location: EIC 1700
REM 4B28 / 4A30
Phone: 571-272-2538

Leslie.henderson@uspto.gov

Search Notes

Mellerson, Kendra

137006

From: Green, Anthony (AU1755)
Sent: Wednesday, November 03, 2004 2:01 PM
To: STIC-EIC1700
Subject: FW: Structure search 10/762579

Please do a structure search for the structures found in claim 1. Thanks.

Anthony Green
Primary Patent Examiner
AU 1755
REMSEN-9C15
(571)272-1367

SCIENTIFIC REFERENCE BR
Sci. & Tech. Info. Cntr

NOV 3

Pat. & T.M. Office



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

BIBDATASHEET

CONFIRMATION NO. 3028

Bib Data Sheet

SERIAL NUMBER 10/762,579	FILING DATE 01/23/2004 RULE	CLASS 106	GROUP ART UNIT 1755	ATTORNEY DOCKET NO. 1417-448
-----------------------------	---------------------------------------	--------------	------------------------	------------------------------------

APPLICANTS

Jin Mizuguchi, Yokohama-shi, JAPAN;

Nobuya Shimo, Ohtake-shi, JAPAN;

** CONTINUING DATA *****

This application is a CIP of PCT/JP02/07603 07/26/2002

** FOREIGN APPLICATIONS *****

JAPAN 2001-227693 07/27/2001

IF REQUIRED, FOREIGN FILING LICENSE GRANTED

** 04/26/2004

Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no	STATE OR	SHEETS	TOTAL	INDEPENDENT
35 USC 119 (a-d) conditions met <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance	COUNTRY	DRAWING	CLAIMS	CLAIMS
Verified and Acknowledged Examiner's Signature _____ Initials _____	JAPAN	2	4	2

ADDRESS

23117
 NIXON & VANDERHYE, PC
 1100 N GLEBE ROAD
 8TH FLOOR
 ARLINGTON, VA
 22201-4714

TITLE

Black perylene-based pigment and process for producing the same

FILING FEE	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT	<input type="checkbox"/> All Fees
		<input type="checkbox"/> 1.16 Fees (Filing)
		<input type="checkbox"/> 1.17 Fees (Processing Ext. of time)

=> d his ful

(FILE 'HOME' ENTERED AT 12:51:26 ON 05 NOV 2004)

FILE 'LREGISTRY' ENTERED AT 12:52:03 ON 05 NOV 2004

FILE 'HCA' ENTERED AT 12:52:15 ON 05 NOV 2004

E MIZUGUCHI YOKOHAMA?/AU

E MIZUGUCHI JIN/AU

L1 100 SEA ABB=ON PLU=ON "MIZUGUCHI JIN"/AU

E SHIMO NOBUYA/AU

L2 4 SEA ABB=ON PLU=ON "SHIMO NOBUYA"/AU

L3 2 SEA ABB=ON PLU=ON L1 AND L2

D SCAN

SEL L3 2 RN

SEL L3 1 RN

FILE 'REGISTRY' ENTERED AT 12:57:46 ON 05 NOV 2004

L4 6 SEA ABB=ON PLU=ON (128-69-8/BI OR 494224-70-3/BI OR 494224-71-4/BI OR 55034-79-2/BI OR 55034-81-6/BI OR 81-33-4/BI)

D SCAN

D L4 1-6 HITSTR RN

L5 STRUCTURE

L6 12 SEA SSS SAM L5

D QUE STAT L6

L7 3048 SEA SSS FUL L5

FILE 'LREGISTRY' ENTERED AT 13:30:07 ON 05 NOV 2004

L8 STRUCTURE

L9 STRUCTURE

L10 STRUCTURE L9

L11 STRUCTURE L10

FILE 'REGISTRY' ENTERED AT 13:35:41 ON 05 NOV 2004

L12 11 SEA SUB=L7 SSS SAM L8

D SCAN

L13 127 SEA SUB=L7 SSS FUL L8

L14 50 SEA SUB=L7 SSS SAM L9

L15 2408 SEA SUB=L7 SSS FUL L9

L16 3 SEA SUB=L7 SSS SAM L10

L17 142 SEA SUB=L7 SSS FUL L10

D QUE STAT

L18 11 SEA SUB=L7 SSS SAM L11

L19 149 SEA SUB=L7 SSS FUL L11

D QUE STAT

L20 1 SEA ABB=ON PLU=ON L13 AND L15

D SCAN

L21 0 SEA ABB=ON PLU=ON L13 AND L17

D QUE STAT

L22 0 SEA ABB=ON PLU=ON L13 AND L19

L23 0 SEA ABB=ON PLU=ON L15 AND L17

L24 0 SEA ABB=ON PLU=ON L15 AND L19

L25 5 SEA ABB=ON PLU=ON L17 AND L19

FILE 'HCA' ENTERED AT 14:02:46 ON 05 NOV 2004

L26 1 SEA ABB=ON PLU=ON L20

D SCAN

L27 10 SEA ABB=ON PLU=ON L25

D SCAN

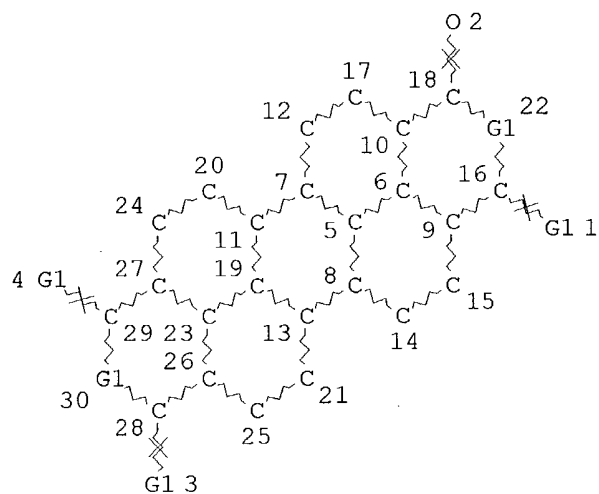
FILE 'REGISTRY' ENTERED AT 14:04:12 ON 05 NOV 2004

SAV L7 GRE579/A
 SAV L13 GRE579A/A
 SAV L15 GRE579B/A
 SAV L17 GRE579C/A
 SAV L19 GRE579D/A
 SAV L20 GRE579E/A
 SAV L25 GRE579F/A

FILE 'HCA' ENTERED AT 14:08:55 ON 05 NOV 2004

L28 1033 SEA ABB=ON PLU=ON L13
 L29 2735 SEA ABB=ON PLU=ON L15
 L30 225 SEA ABB=ON PLU=ON L17
 L31 343 SEA ABB=ON PLU=ON L19
 L32 394 SEA ABB=ON PLU=ON L28 AND L29
 L33 43 SEA ABB=ON PLU=ON L28 AND L30
 L34 50 SEA ABB=ON PLU=ON L28 AND L31
 L35 65 SEA ABB=ON PLU=ON L29 AND L30
 L36 100 SEA ABB=ON PLU=ON L29 AND L31
 L37 190 SEA ABB=ON PLU=ON L30 AND L31
 D L3 1-2 ALL
 L38 649 SEA ABB=ON PLU=ON (L32 OR L33 OR L34 OR L35 OR L36 OR L37)
 L39 33 SEA ABB=ON PLU=ON L38 AND BLACK
 L40 2126184 SEA ABB=ON PLU=ON CALEFACT? OR TORREFACT? OR PYROL? OR
 SINTER? OR CALCIN? OR AUTOCLAV? OR THERMOL? OR THERMAL? OR
 TEPEFACT? OR MELT? OR FUSE# OR FUSING# OR FUSION?
 L41 65 SEA ABB=ON PLU=ON L38 AND L40
 L42 1 SEA ABB=ON PLU=ON L39 AND L41
 D SCAN
 D L41 1 TI AU
 D QUE STAT L39
 L43 1608840 SEA ABB=ON PLU=ON BURN? OR CHARR? OR COMBUST? OR IGNIT? OR
 CARBONIZ? OR SCORCH? OR SING? OR INCINERAT?
 L44 43 SEA ABB=ON PLU=ON L38 AND L43
 L45 2 SEA ABB=ON PLU=ON L44 AND BLACK
 D SCAN
 L46 35 SEA ABB=ON PLU=ON L38 AND (MIXT# OR MIXTURE? OR BLEND? OR
 ADMIX? OR COMMIX? OR IMMIX? OR INTERMIX? OR COMPOSIT? OR
 COMPN# OR COMPSN# OR FORMULAT? OR INTERSPER?)/TI
 L47 8 SEA ABB=ON PLU=ON L46 AND L39
 L48 3 SEA ABB=ON PLU=ON L46 AND L41
 L49 2 SEA ABB=ON PLU=ON L46 AND L44
 L50 12 SEA ABB=ON PLU=ON L45 OR L47 OR L48 OR L49
 D SCAN
 L51 441247 SEA ABB=ON PLU=ON BURN? OR CHARR? OR COMBUST? OR IGNIT? OR
 CARBONIZ? OR SCORCH? OR SINGE# OR SINGING# OR INCINERAT?
 L52 4 SEA ABB=ON PLU=ON L38 AND L51
 D SCAN
 L53 2 SEA ABB=ON PLU=ON L44 AND BLACK
 D SCAN L45
 L54 15 SEA ABB=ON PLU=ON L42 OR L45 OR L47 OR L48 OR L49 OR L52
 L55 11 SEA ABB=ON PLU=ON L26 OR L27
 L56 26 SEA ABB=ON PLU=ON L54 OR L55
 D L39 1-33 TI
 L57 23 SEA ABB=ON PLU=ON L39 NOT L54
 L58 33 SEA ABB=ON PLU=ON L39 NOT L55
 L59 23 SEA ABB=ON PLU=ON L39 NOT L56

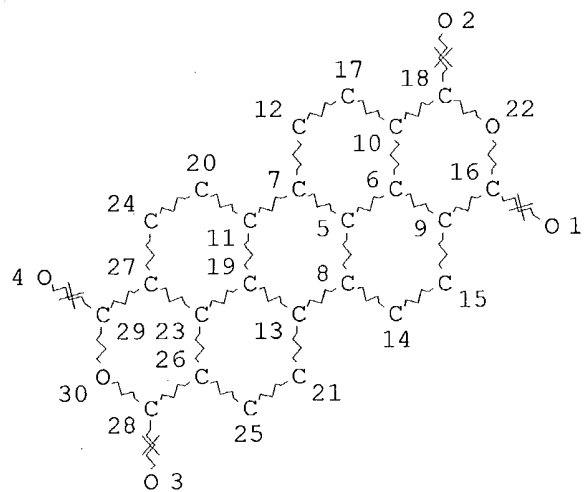
=> d que stat 126
L5 STR



VAR G1=N/O
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE
L7 3048 SEA FILE=REGISTRY SSS FUL L5
L8 STR

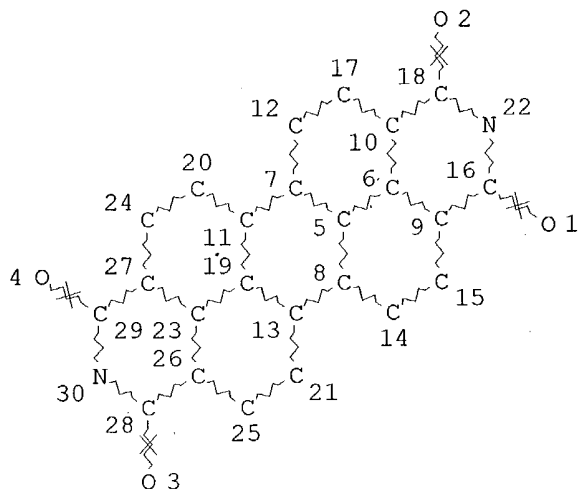


NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L9 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L13 127 SEA FILE=REGISTRY SUB=L7 SSS FUL L8

L15 2408 SEA FILE=REGISTRY SUB=L7 SSS FUL L9

L20 1 SEA FILE=REGISTRY ABB=ON PLU=ON L13 AND L15

L26 1 SEA FILE=HCA ABB=ON PLU=ON L20

=> d l26 1 cbib abs hitstr hitind

L26 ANSWER 1 OF 1 HCA COPYRIGHT 2004 ACS on STN

128:217803 Synthesis, Characterization, and Xerographic Electrical Characteristics of Perylene-Containing Polyimides. Wang, Z. Y.; Qi, Y.; Gao, J. P.; Sacripante, G. G.; Sundararajan, P. R.; Duff, J. D. (Department of Chemistry, Carleton University, Ottawa, ON, KLS SB6, Can.). Macromolecules, 31(7), 2075-2079 (English) 1998. CODEN: MAMOBX. ISSN: 0024-9297. Publisher: American Chemical Society.

AB A series of perylene-containing polyimides and copolyimides were synthesized and characterized by DSC, TGA, NMR, UV-vis, and x-ray powder diffraction measurements. Xerog. elec. measurements indicated that perfectly alternating copolyimides had higher photosensitivity than that of homopolyimides and a random copolyimide. After annealing, polyimide films showed a red-shift in UV-vis absorption and improved photosensitivity due to an increase in crystallinity, as indicated by wide-angle x-ray diffraction measurements.

IT 204329-72-6P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and photosensitivity and crystallinity and xerog.
characteristics of perylene-polyimides)

RN 204329-72-6 HCA

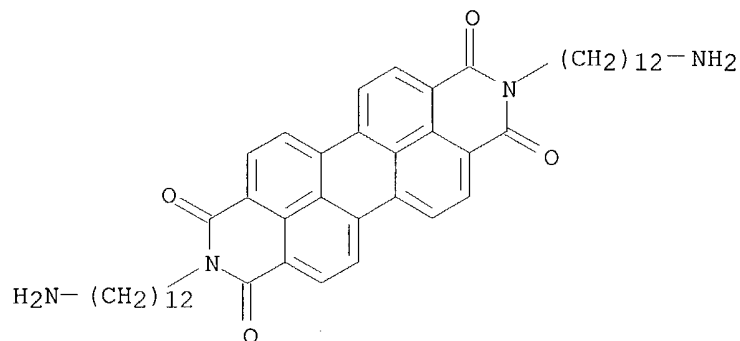
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,

2,9-bis(12-aminododecyl)-, polymer with 4,5-diphenylbenzo[1,2-c:3,4-c']difuran-1,3,6,8-tetrone and perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)

CM 1

CRN 204329-67-9

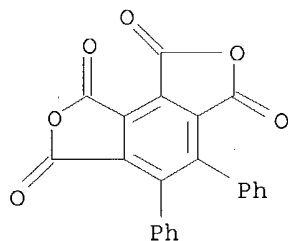
CMF C48 H60 N4 O4



CM 2

CRN 152504-70-6

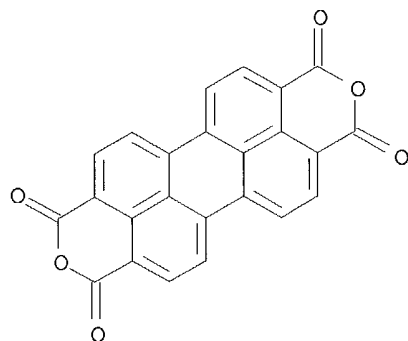
CMF C22 H10 O6



CM 3

CRN 128-69-8

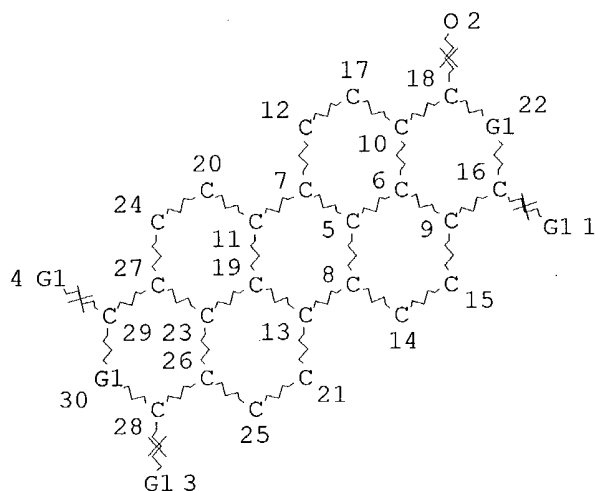
CMF C24 H8 O6



CC 36-5 (Physical Properties of Synthetic High Polymers)
 Section cross-reference(s): 35, 74
 IT 188713-51-1P, 1,5-Diaminopentane-3,4,9,10-perylenetetracarboxylic dianhydride copolymer 188713-52-2P, 1,12-Diaminododecane-3,4,9,10-perylenetetracarboxylic dianhydride copolymer 194284-72-5P, 1,12-Diaminododecane-3,4,9,10-perylenetetracarboxylic dianhydride copolymer, SRU 204329-58-8P, 1,5-Diaminopentane-3,4,9,10-perylenetetracarboxylic dianhydride copolymer, SRU 204329-59-9P, 1,7-Diaminoheptane-3,4,9,10-perylenetetracarboxylic dianhydride copolymer 204329-60-2P, 1,7-Diaminoheptane-3,4,9,10-perylenetetracarboxylic dianhydride copolymer, SRU 204329-61-3P, 1,8-Diaminooctane-3,4,9,10-perylenetetracarboxylic dianhydride copolymer 204329-62-4P, 1,8-Diaminooctane-3,4,9,10-perylenetetracarboxylic dianhydride copolymer, SRU 204329-63-5P, 1,9-Diaminononane-3,4,9,10-perylenetetracarboxylic dianhydride copolymer 204329-64-6P, 1,9-Diaminononane-3,4,9,10-perylenetetracarboxylic dianhydride copolymer, SRU 204329-65-7P, 1,10-Diaminodecane-3,4,9,10-perylenetetracarboxylic dianhydride copolymer 204329-66-8P, 1,10-Diaminodecane-3,4,9,10-perylenetetracarboxylic dianhydride copolymer, SRU 204329-68-0P 204329-69-1P 204329-70-4P 204329-71-5P **204329-72-6P** 204329-73-7P 204329-74-8P 204329-75-9P 204329-76-0P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (preparation and photosensitivity and crystallinity and xerog. characteristics of perylene-polyimides)

=> d que stat 127

L5 STR



VAR G1=N/O

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

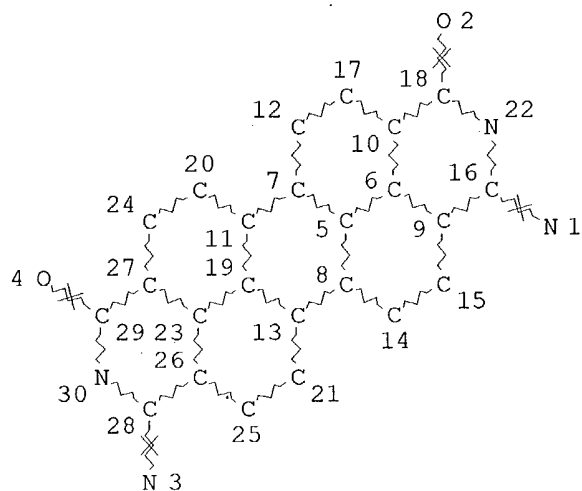
NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L7 3048 SEA FILE=REGISTRY SSS FUL L5

L10

STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

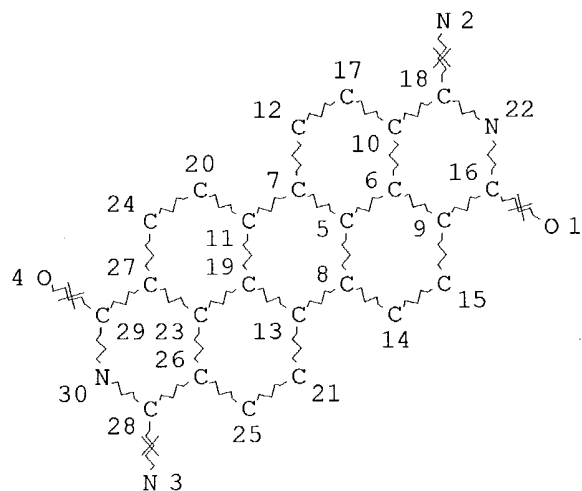
GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L11 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L17 142 SEA FILE=REGISTRY SUB=L7 SSS FUL L10

L19 149 SEA FILE=REGISTRY SUB=L7 SSS FUL L11
L25 5 SEA FILE=REGISTRY ABB=ON PLU=ON L17 AND L19
L27 10 SEA FILE=HCA ABB=ON PLU=ON L25

=> d l27 1-10 cbib abs hitstr hitind

L27 ANSWER 1 OF 10 HCA COPYRIGHT 2004 ACS on STN

138:262595 Thin crystal film polarizers and retarders. Ignatov, Leonid Ya.; Lazarev, Pavel I.; Nazarov, Victor N.; Ovchinnikova, Natalya A. (Optiva, Inc., USA). Proceedings of SPIE-The International Society for Optical Engineering, 4658(Liquid Crystal Materials, Devices, and Applications VIII), 79-90 (English) 2002. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB The authors developed a new technol. for thin crystal film (TCF) manufacturing based on water-soluble salts of aromatic polycyclic compds. TCF is produced by coating and subsequent drying of an aqueous solution on plastic or glass surface

into molecularly oriented 100-1000 nm thick crystal nanofilm. First industrial application of nanofilms is TCF polarizer for liquid crystal displays (LCD). TCF polarizers are made from modified organic dyes with relatively narrow spectral absorption band. Mixing various dyes allows covering broad spectral region. Blending provides variety of combinations of background and character colors that are necessary for applications. TCF made from dichroic dyes are highly anisotropic, biaxial extraordinary polarizers. Birefringence of TCF made from some materials reaches 1.0. Several highly birefringent TCFs show specific retardation characteristics. For example, 300 nm thick TCF based on dichroic dye with narrow absorption band at 450 nm and transparent in the long-wave region, has maximum birefringence of 0.85 in the wavelength region of 500-800 nm. TCF are available for industrial application in LCD as external, internal polarizers and retarders.

IT 79534-91-1D, sulfonated

RL: DEV (Device component use); PRP (Properties); USES (Uses)
(spectral-color characteristics of thin crystal film polarizers and retarders for liquid crystal displays)

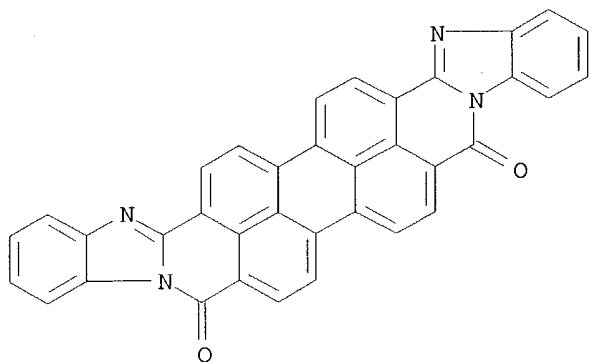
RN 79534-91-1 HCA

CN Bisbenzimidazo[2,1-a:1',2'-b']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-6,11-dione, mixt. with bisbenzimidazo[2,1-a:2',1'-a']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-10,21-dione (9CI) (CA INDEX NAME)

CM 1

CRN 55034-81-6

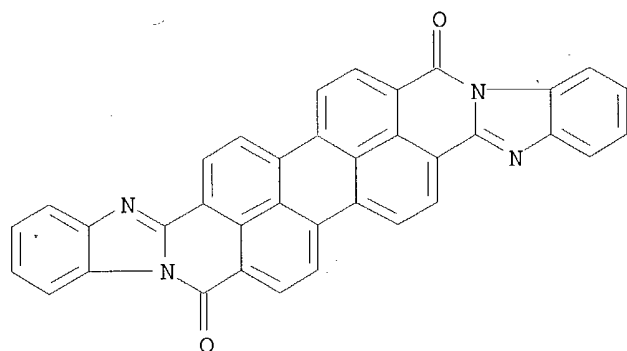
CMF C36 H16 N4 O2



CM 2

CRN 55034-79-2

CMF C36 H16 N4 O2



CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 73

IT 81-77-6D, sulfonated 4216-02-8D, sulfonated 4424-06-0D, sulfonated
79534-91-1D, sulfonated

RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (spectral-color characteristics of thin crystal film polarizers and retarders for liquid crystal displays)

L27 ANSWER 2 OF 10 HCA COPYRIGHT 2004 ACS on STN

133:224247 Photoelectric-conversion pigment particles, their manufacture and use as electrophotographic receptors and electrophotographic imaging method using them. Yayata, Hirofumi; Watanabe, Kazumasa; Yasuda, Kenichi (Konica Co., Japan). Jpn. Kokai Tokkyo Koho JP 2000239545 A2 20000905, 18 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-357041 19991216. PRIORITY: JP 1998-362802 19981221.

AB Electrophotog. receptors are obtained from the condensation products of polycyclic acid anhydrides and aromatic diamine compds., and pigments from metal complexes such as phthalocyanine complexes. Thus, mixing 0.3 g titanyl phthalocyanine with 30 g cis- and trans-bisbenzoimidazole perylene (derived from the condensation of 3,4,9,10-perylenetetracarboxylic anhydride and 1,2-diaminobenzene) mixture in 900 mL concentrated H2SO4 for 2 h, filtering and pouring the filtrate into 15 L water at <30° gave a

precipitate 1.5 parts of which was milled with butyral resin 0.5, cyclohexanone 10 and 2-butanone 40 parts in a sand mill, coated on a laminate of CM 8000 (polyamide) film and an Al-deposited PET polyester film to dry thickness of .apprx.0.3 μ m as a charge generation layer, and covered with a solution of a carrier transport agent 0.65, Iupilon Z 200 (polycarbonate) 1 in dichloroethane 7.5 parts to dry thickness of .apprx.24 μ m to give a photo-receptor.

IT **79534-91-1**

RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(mixture with metallophthalocyanines; photoelec.-conversion pigment particles, manufacture and use as electrophotog. receptors and electrophotog. imaging method using them)

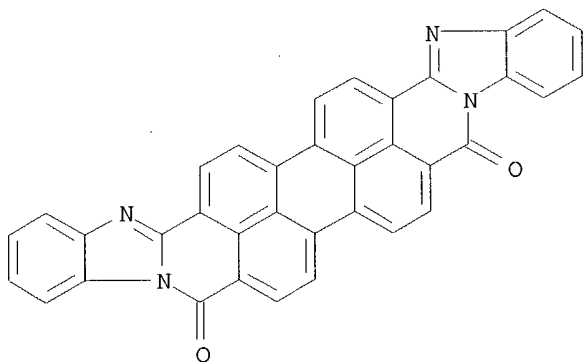
RN 79534-91-1 HCA

CN Bisbenzimidazo[2,1-a:1',2'-b']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-6,11-dione, mixt. with bisbenzimidazo[2,1-a:2',1'-a']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-10,21-dione (9CI) (CA INDEX NAME)

CM 1

CRN 55034-81-6

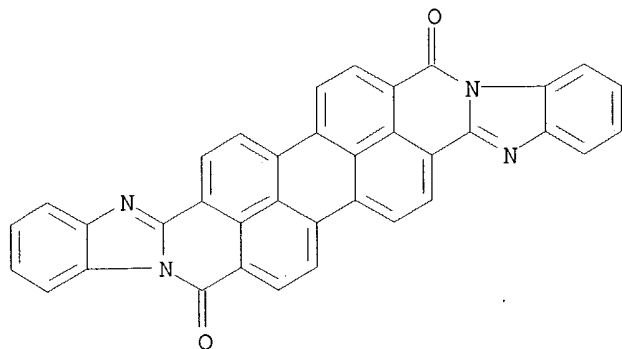
CMF C36 H16 N4 O2



CM 2

CRN 55034-79-2

CMF C36 H16 N4 O2



IC ICM C09B005-62
ICS G03G021-14; C09B003-14; C09B067-22; G03G005-06
CC 41-5 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 74
IT **79534-91-1**
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(mixture with metallophthalocyanines; photoelec.-conversion pigment particles, manufacture and use as electrophotog. receptors and electrophotog. imaging method using them)

L27 ANSWER 3 OF 10 HCA COPYRIGHT 2004 ACS on STN
127:19572 Holding and holding transport devices and method for coating cylindrical materials. Ohira, Akira; Ujihara, Junji; Kijima, Eiichi; Kobayashi, Nobuaki; Asano, Masanari (Konica Co., Japan). Jpn. Kokai Tokkyo Koho JP 09075828 A2 19970325 Heisei, 24 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-240029 19950919.

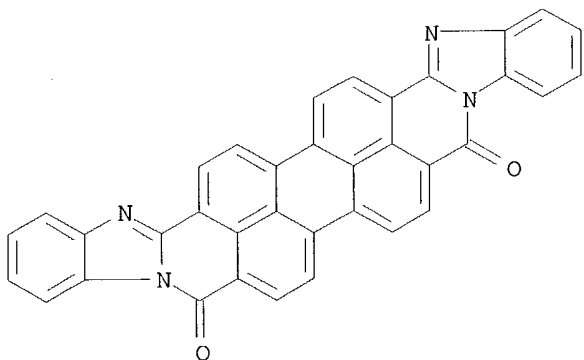
AB Title device used to hold the cylindrical material by connecting with the axis of the material and pushing the material from bottom to top vertically for coating the surface of the material continuously by a vertical coating equipment comprises >2 holders contacting with outside, a hand-part for holding the holders and a bumper which operates when the holders hold the cylindrical material. This device assures that the coating process can be carried out uniformly without coating patches or defects, and the material is not be damaged, deformed or vibrated. Thus a cylindrical aluminum was coated with coating compns. (UCL 3, CGL 3 and CTL 2) using above device, and the performance of the device was evaluated.

IT **79534-91-1**
RL: TEM (Technical or engineered material use); USES (Uses)
(coating composition containing; holding and holding transport devices and method for coating cylindrical aluminum materials)

RN 79534-91-1 HCA
CN Bisbenzimidazo[2,1-a:1',2'-b']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-6,11-dione, mixt. with bisbenzimidazo[2,1-a:2',1'-a']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-10,21-dione (9CI) (CA INDEX NAME)

CM 1

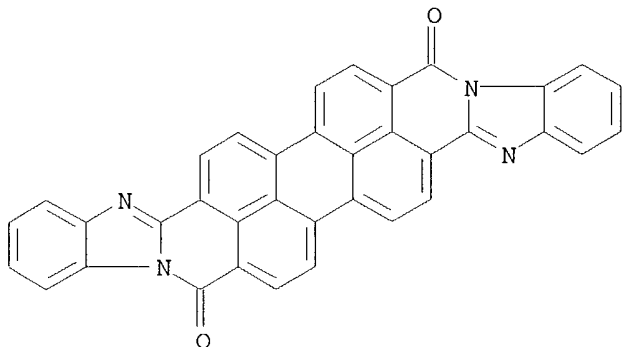
CRN 55034-81-6
CMF C36 H16 N4 O2



CM 2

CRN 55034-79-2

CMF C36 H16 N4 O2



IC ICM B05C013-02

ICS B05C003-12; B05D003-00; B05D007-00; B05D007-14

CC 42-2 (Coatings, Inks, and Related Products)

IT 4378-61-4 24937-78-8, Ethylene-vinyl acetate copolymer 25135-52-8,

Iupilon Z 200 26201-32-1 26471-16-9, Carbonic acid-

cyclohexylidenediphenol copolymer **79534-91-1** 100463-48-7

127858-71-3 189320-09-0

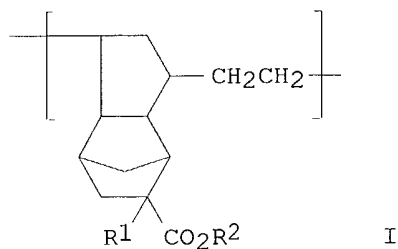
RL: TEM (Technical or engineered material use); USES (Uses)

(coating composition containing; holding and holding transport devices and method for coating cylindrical aluminum materials)

L27 ANSWER 4 OF 10 HCA COPYRIGHT 2004 ACS on STN

126:24830 Electrophotographic photoreceptor containing norbornane resin and electrophotographic apparatus using the same. Kitahara, Kenichi; Nakanishi, Tatsuo; Hamaguchi, Shinichi (Konishiroku Photo Ind, Japan). Jpn. Kokai Tokkyo Koho JP 08234458 A2 19960913 Heisei, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-36545 19950224.

GI



AB The title photoreceptor comprises a photosensitive layer containing a norbornane resin I (R1, R2 = H, halo, monovalent organic group) on a conductive support. The photosensitive layer may contain a polycarbonate resin and/or a charge generation substance. The photoreceptor shows high dispersibility and provides high quality images.

IT **79534-91-1**

RL: MOA (Modifier or additive use); USES (Uses)

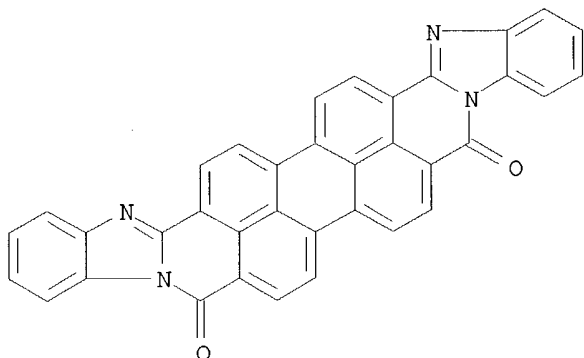
(charge generation substance; photosensitive layer of electrophotog.

photoreceptor containing)

RN 79534-91-1 HCA
 CN Bisbenzimidazo[2,1-a:1',2'-b']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-6,11-dione, mixt. with bisbenzimidazo[2,1-a:2',1'-a']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-10,21-dione (9CI) (CA INDEX NAME)

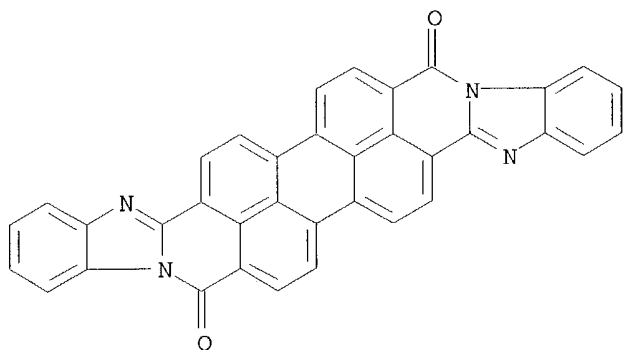
CM 1

CRN 55034-81-6
 CMF C36 H16 N4 O2



CM 2

CRN 55034-79-2
 CMF C36 H16 N4 O2



IC ICM G03G005-05
 ICS G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 4378-61-4 26201-32-1 **79534-91-1**

RL: MOA (Modifier or additive use); USES (Uses)
 (charge generation substance; photosensitive layer of electrophotog.
 photoreceptor containing)

L27 ANSWER 5 OF 10 HCA COPYRIGHT 2004 ACS on STN

125:45040 Electrophotographic photoreceptor and imaging apparatus using the same. Minemura, Hiroaki; Yasuda, Kenichi; Kitahara, Yoko; Sakai, Eiichi

(Konishiroku Photo Ind, Japan). Jpn. Kokai Tokkyo Koho JP 08095279 A2 19960412 Heisei, 20 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-235479 19940929.

AB The title photoreceptor comprises a conductive support, an interlayer containing Ti or Al chelate compound with an acetoacetate or β -diketone chelate group and an alkoxy group, and a silane coupling agent having an oxirane end group. The photosensitive layer may contain an imidazole perylene compound and titanyl phthalocyanine. The photoreceptor showed improved charging characteristics, imaging characteristics and potlife.

IT **79534-91-1**

RL: DEV (Device component use); USES (Uses)
(charge generation material of electrophotog. photoreceptor)

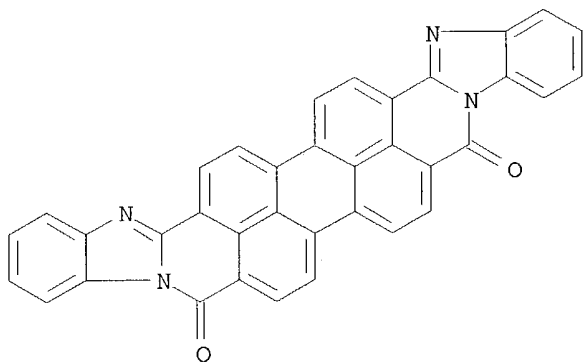
RN 79534-91-1 HCA

CN Bisbenzimidazo[2,1-a:1',2'-b']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-6,11-dione, mixt. with bisbenzimidazo[2,1-a:2',1'-a']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-10,21-dione (9CI) (CA INDEX NAME)

CM 1

CRN 55034-81-6

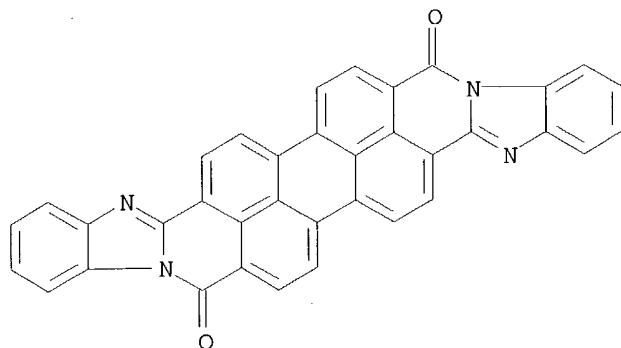
CMF C36 H16 N4 O2



CM 2

CRN 55034-79-2

CMF C36 H16 N4 O2



IC ICM G03G005-14

ICS G03G005-06; G03G015-043; G03G015-04
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 6424-58-4 **79534-91-1** 127858-71-3
RL: DEV (Device component use); USES (Uses)
(charge generation material of electrophotog. photoreceptor)

L27 ANSWER 6 OF 10 HCA COPYRIGHT 2004 ACS on STN
119:99877 Photovoltaic device containing organic material layers and having high conversion efficiency. Yoshikawa, Masao; Suzuki, Tetsurou (Ricoh Co., Ltd., Japan). U.S. US 5201961 A 19930413, 11 pp. (English).
CODEN: USXXAM. APPLICATION: US 1991-703723 19910521. PRIORITY: JP 1990-131319 19900523.

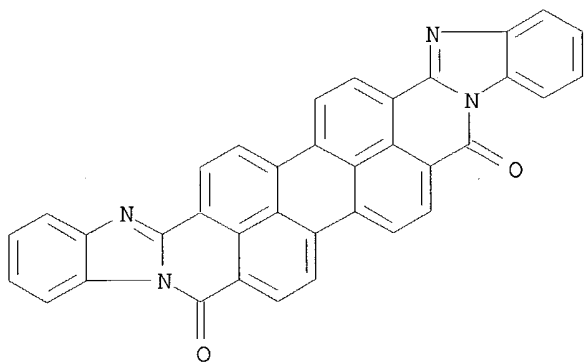
AB The device contains, from their light-incident side, a 1st layer of an organic electron acceptor (e.g., perylene tetracarboxylic acid bismethylimide), a 2nd layer of an organic electron donor (e.g., chloroaluminumphthalocyanine), and a 3rd layer of an organic electron donor different from that in the 2nd layer disposed between an electrode and a light transmitting electrode. Another type of the device has a 1st layer of an electron donor, and the 2nd and 3rd layers of different electron acceptors.

IT **79534-91-1**
RL: USES (Uses)
(photovoltaic devices containing layers of, high-conversion efficiency)

RN 79534-91-1 HCA
CN Bisbenzimidazo[2,1-a:1',2'-b']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-6,11-dione, mixt. with bisbenzimidazo[2,1-a:2',1'-a']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-10,21-dione (9CI) (CA INDEX NAME)

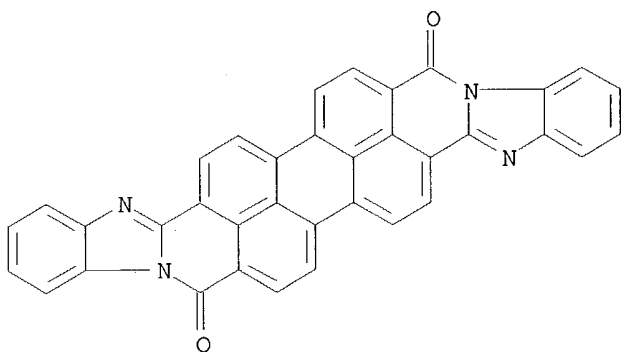
CM 1

CRN 55034-81-6
CMF C36 H16 N4 O2



CM 2

CRN 55034-79-2
CMF C36 H16 N4 O2



IC ICM H01L031-06
ICS H01L031-0344
NCL 136263000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT 147-14-8, Copper phthalocyanine 574-93-6, Phthalocyanine 980-26-7,
2,9-Dimethylquinacridone 1047-16-1, Quinacridone 4378-61-4 4424-06-0
5521-31-3 14154-42-8 14320-04-8, Zinc phthalocyanine 15187-16-3,
Lead phthalocyanine 25233-30-1, Polyaniline 26201-32-1, Titanyl
phthalocyanine 30604-81-0 70581-42-9 73276-71-8 **79534-91-1**
104934-50-1, Poly(3-hexylthiophene) 108443-85-2, Poly(N,N'-
diphenylbenzidine) 123790-72-7 149220-02-0
RL: USES (Uses)
(photovoltaic devices containing layers of, high-conversion efficiency)

L27 ANSWER 7 OF 10 HCA COPYRIGHT 2004 ACS on STN
117:58501 Organic heterojunction photovoltaic devices. Yoshikawa, Masao;
Suzuki, Tetsuo (Ricoh Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP
04027170 A2 19920130 Heisei, 8 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1990-131318 19900523.

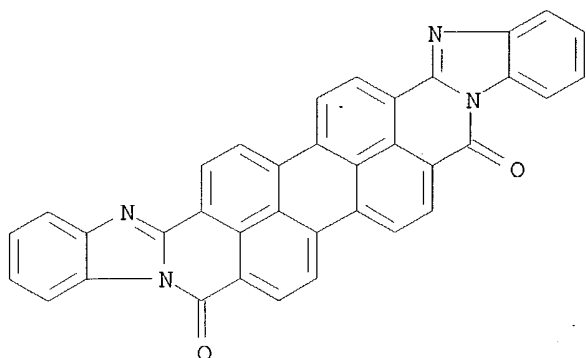
AB The devices consist of sequentially a transparent front electrode, an organic
electron-accepting layer and an organic electron-donating layer forming a
rectifying junction, an organic electron-accepting or electron-donating layer
which has a major photoabsorption wavelength region different from that of
the above organic layers, and a reflecting backside electrode. Short circuit
is decreased and conversion efficiency is increased.

IT **79534-91-1**
RL: USES (Uses)
(organic heterojunction photovoltaic devices containing layers of)

RN 79534-91-1 HCA
CN Bisbenzimidazo[2,1-a:1',2'-b']anthra[2,1,9-def:6,5,10-
d'e'f']diisoquinoline-6,11-dione, mixt. with bisbenzimidazo[2,1-a:2',1'-
a']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-10,21-dione (9CI) (CA
INDEX NAME)

CM 1

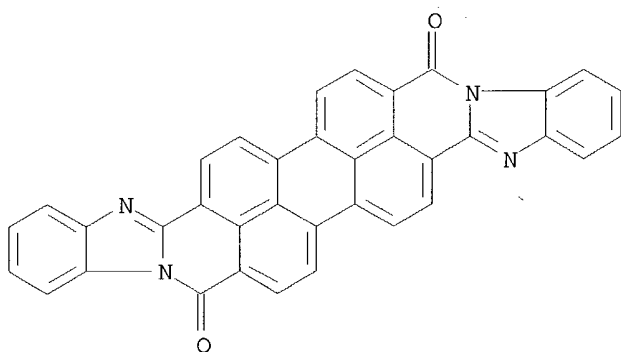
CRN 55034-81-6
CMF C36 H16 N4 O2



CM 2

CRN 55034-79-2

CMF C36 H16 N4 O2



IC ICM H01L031-04

ICS H01L029-28; H01L031-10

CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

IT 574-93-6, Phthalocyanine 980-26-7, 2,9-Dimethylquinacridone 5521-31-3
14154-42-8 26201-32-1, Titanyl phthalocyanine 57609-72-0**79534-91-1**

RL: USES (Uses)

(organic heterojunction photovoltaic devices containing layers of)

L27 ANSWER 8 OF 10 HCA COPYRIGHT 2004 ACS on STN

113:68317 Electrophotographic photoconductive imaging members with mixtures of photogenerator pigment compositions. Loutfy, Rafik O.; Hor, Ah Mee; Liebermann, George; Toth, Alan J.; Hsiao, Cheng Kuo; Carmichael, Kathleen M.; Tokoli, Emery G. (Xerox Corp., USA). U.S. US 4882254 A 19891121, 14 pp. (English). CODEN: USXXAM. APPLICATION: US 1988-214990 19880705.

AB Layered photoresponsive imaging members that are useful in electrophotog. processes are composed of a support, a photogenerator layer comprised of a mixture of 1st and 2nd pigments, and an aryl amine hole transport layer. The imaging member has a photosensitivity in the visible and IR regions. The pigment mixts. are comprised of perylenes and phthalocyanines; polycyclic quinones and phthalocyanines; and perinones and

phthalocyanines. Thus, an imaging member showing photosensitivity in the 400-900 nm region was prepared by coating a Ti-coated Mylar support with a vanadyl phthalocyanine-benzimidazole-perylene mixture to give a photogenerator layer and then with a mixture of Makrolon polycarbonate resin and N,N'-diphenyl-N',N'-bis(3-methylphenyl)-1,1'-biphenyl-4,4'-diamine.

IT **128061-06-3**

RL: USES (Uses)

(electrophotog. receptor with arylamine-containing hole transporting layer and photogenerator mixture containing)

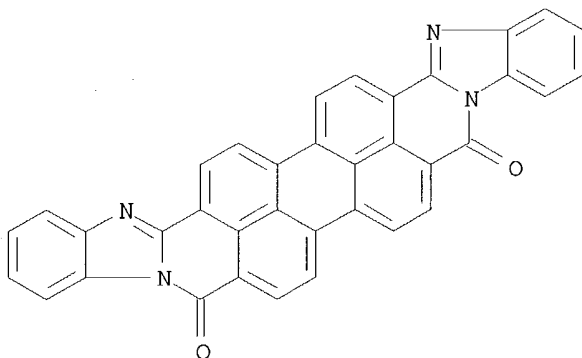
RN 128061-06-3 HCA

CN Vanadium, oxo[29H,31H-phthalocyaninato(2-)-N29,N30,N31,N32]-, (SP-5-12)-, mixt. with bisbenzimidazo[2,1-a:1',2'-b']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-6,11-dione and bisbenzimidazo[2,1-a:2',1'-a']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-10,21-dione (9CI) (CA INDEX NAME)

CM 1

CRN 55034-81-6

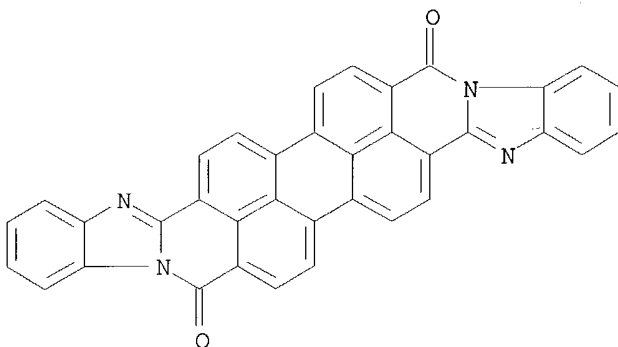
CMF C36 H16 N4 O2



CM 2

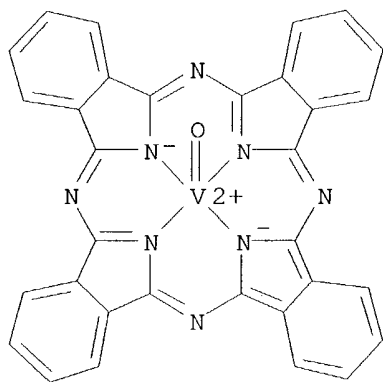
CRN 55034-79-2

CMF C36 H16 N4 O2



CM 3

CRN 13930-88-6
 CMF C32 H16 N8 O V
 CCI CCS



IC ICM G03G005-10
 NCL 430059000
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 IT **128061-06-3**
 RL: USES (Uses)
 (electrophotog. receptor with arylamine-containing hole transporting layer and photogenerator mixture containing)

L27 ANSWER 9 OF 10 HCA COPYRIGHT 2004 ACS on STN

95:172702 Multilayer organic photovoltaic elements. Tang, Ching W. (Eastman Kodak Co., USA). U.S. US 4281053 19810728, 14 pp. Cont.-in-part of U.S. Ser. No. 5,636, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1980-119328 19800207.

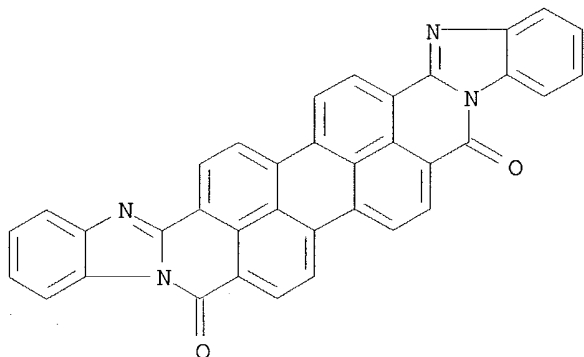
AB A photoconductive laminate and its use are disclosed, the laminate comprising 2 layers of organic compds., each layer being a single phase and ≥ 1 of the compds. having a generally planar polycyclic nucleus. Thus, several organic solar cells were prepared and their open-circuit voltages, short-circuit c.ds., fill factors, and conversion and quantum efficiencies were determined

IT **79534-91-1**
 RL: USES (Uses)
 (photoelec. solar cells containing, performance of)

RN 79534-91-1 HCA
 CN Bisbenzimidazo[2,1-a:1',2'-b']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-6,11-dione, mixt. with bisbenzimidazo[2,1-a:2',1'-a']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-10,21-dione (9CI) (CA INDEX NAME)

CM 1

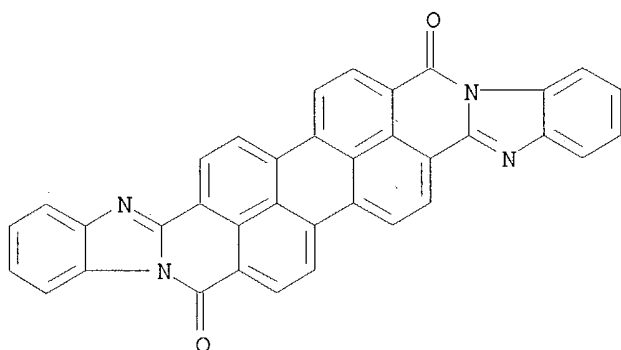
CRN 55034-81-6
 CMF C36 H16 N4 O2



CM 2

CRN 55034-79-2

CMF C36 H16 N4 O2



IC B32B009-04; B32B015-04; G05D011-00; H01J040-14

NCL 430058000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 27, 28

IT 81-33-4 128-65-4 147-14-8 188-94-3 190-26-1 475-71-8 574-93-6

2379-77-3 3317-67-7 4216-02-8 4424-06-0 5521-31-3 13586-34-0

14039-00-0 14055-02-8 14075-08-2 14320-04-8 15187-16-3

17558-09-7 17558-10-0 20909-39-1 24108-89-2 32283-97-9

41494-40-0 41494-47-7 51848-74-9 56347-56-9 59442-37-4

63561-31-9 65222-28-8 71187-17-2 71636-77-6 71636-79-8

79518-99-3 79519-00-9 79525-32-9 **79534-91-1** 79554-68-0

79554-70-4 79554-72-6 79554-74-8

RL: USES (Uses)

(photoelec. solar cells containing, performance of)

L27 ANSWER 10 OF 10 HCA COPYRIGHT 2004 ACS on STN

80:49064 Dyed polyamide fibers. Gangneux, Philippe (Ugine Kuhlmann). Ger.

Offen. DE 2305552 19730816, 12 pp. (German). CODEN: GWXXBX.

APPLICATION: DE 1973-2305552 19730205.

AB Colored linear polyamide fibers were prepared by incorporation of diamino pigments, e.g. N,N'-bis(4-aminophenyl)-3,4:9,10-perylenedicarboximide (I), into the polyamide by polycondensation with the other monomers. Thus, 49.95 parts hexamethylenediamine adipate and 0.05 parts equimolar I-adipic

acid mixture under N were heated 1 hr at 100.deg. and 2.5 hr at 280.deg., under N, to give a adipic acid-N,N'-bis(4-aminophenyl)-3,4:9,10-perylenedicarboximide-hexamethylenediamine copolymer [43175-90-2] containing no extractable dye and giving red fibers.

IT 51555-33-0 51635-25-7 51730-41-7

RL: USES (Uses)
(fiber, colored)

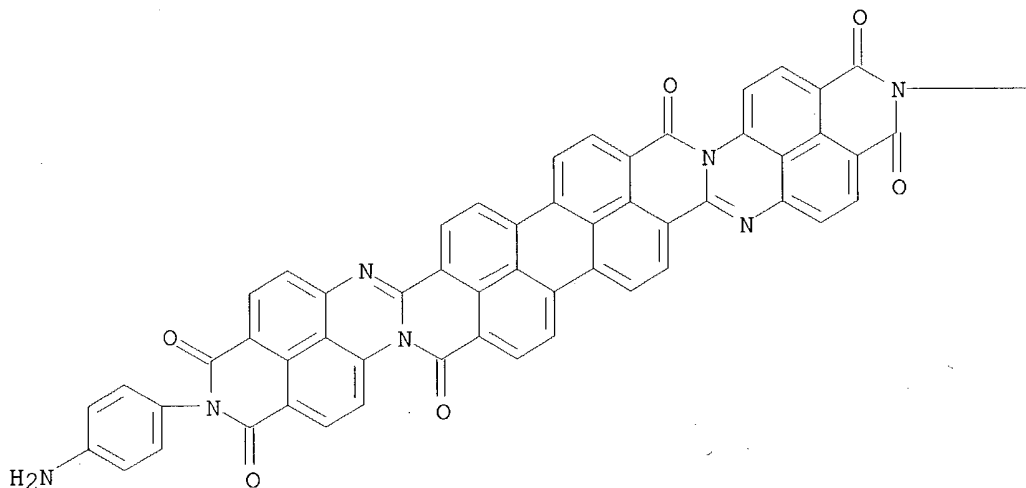
RN 51555-33-0 HCA

CN Hexanedioic acid, polymer with 2,16-bis(4-aminophenyl)dipyrido[3,4,5-gh:3',4',5'-g'h']anthra[2'',1'',9'':4,5,6;6'',5'',10'':4',5',6']diisoquino[2,1-a:2',1'-a']diperimidine-1,3,11,15,17,25(2H,16H)-hexone, 2,17-bis(4-aminophenyl)dipyrido[3,4,5-gh:3',4',5'-g'h']phenanthro[2'',1'',10'':4,5,6;7'',8'',9'':4',5',6']diisoquino[2,1-a:2',1'-a']diperimidine-1,3,7,12,16,18(2H,17H)-hexone, hexahydro-2H-azepin-2-one and 1,6-hexanediamine (9CI) (CA INDEX NAME)

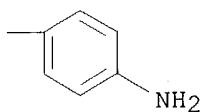
CM 1

CRN 51555-32-9
CMF C60 H28 N8 O6

PAGE 1-A



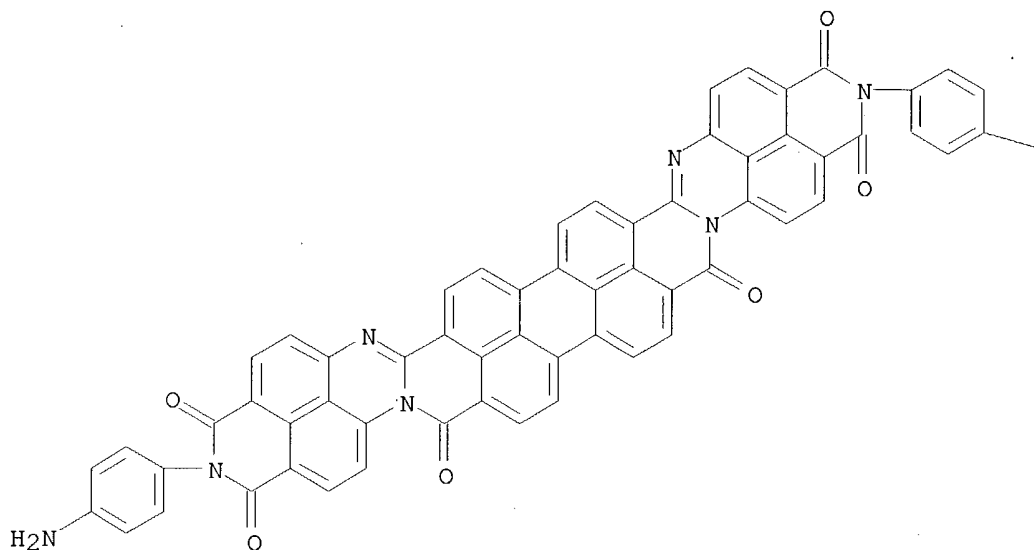
PAGE 1-B



CM 2

CRN 49546-26-1
CMF C60 H28 N8 O6

PAGE 1-A



PAGE 1-B

NH₂

CM 3

CRN 124-09-4
CMF C6 H16 N2

H₂N- (CH₂)₆-NH₂

CM 4

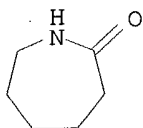
CRN 124-04-9
CMF C6 H10 O4

HO₂C- (CH₂)₄-CO₂H

CM 5

CRN 105-60-2

CMF C6 H11 N O



RN 51635-25-7 HCA

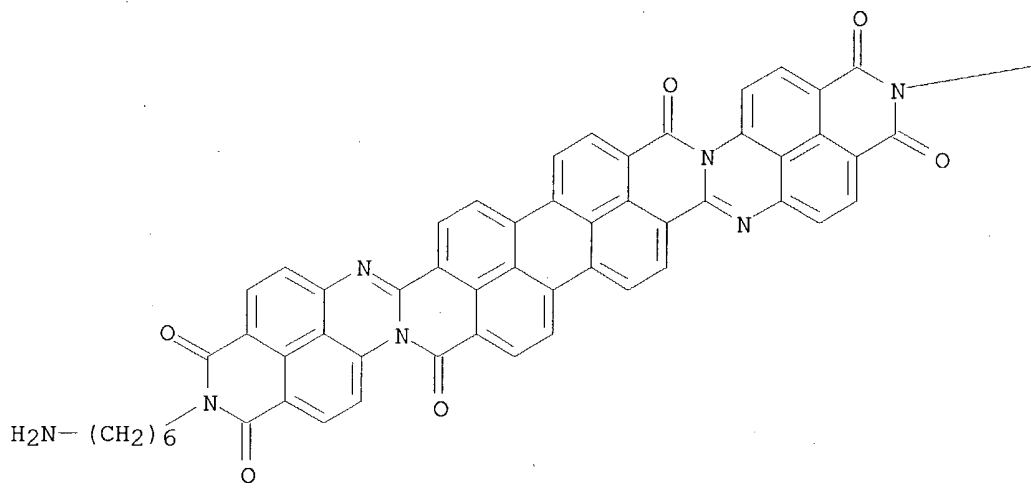
CN Decanedioic acid, polymer with 2,16-bis(6-aminohexyl)dipyrido[3,4,5-gh:3',4',5'-g'h']anthra[2'',1'',9'':4,5,6;6'',5'',10'':4',5',6']diisoquino[2,1-a:2',1'-a']diperimidine-1,3,11,15,17,25(2H,16H)-hexone, 2,17-bis(6-aminohexyl)dipyrido[3,4,5-gh:3',4',5'-g'h']phenanthro[2'',1'',10'':4,5,6;7'',8'',9'':4',5',6']diisoquino[2,1-a:2',1'-a']diperimidine-1,3,7,12,16,18(2H,17H)-hexone and 1,6-hexanediamine decanedioate (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 51555-34-1

CMF C60 H44 N8 O6

PAGE 1-A



PAGE 1-B

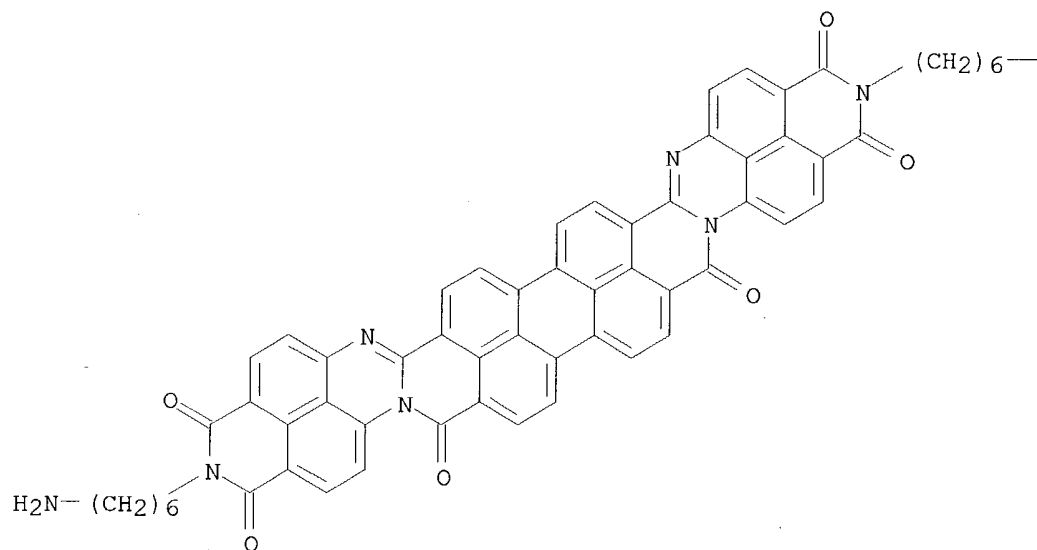
—(CH₂)₆—NH₂

CM 2

CRN 49861-38-3

CMF C60 H44 N8 O6

PAGE 1-A



PAGE 1-B

—NH₂

CM 3

CRN 111-20-6
CMF C10 H18 O4

HO₂C—(CH₂)₈—CO₂H

CM 4

CRN 6422-99-7
CMF C10 H18 O4 . C6 H16 N2

CM 5

CRN 124-09-4
CMF C6 H16 N2

H₂N—(CH₂)₆—NH₂

CM 6

CRN 111-20-6
CMF C10 H18 O4

HO₂C-(CH₂)₈-CO₂H

RN 51730-41-7 HCA

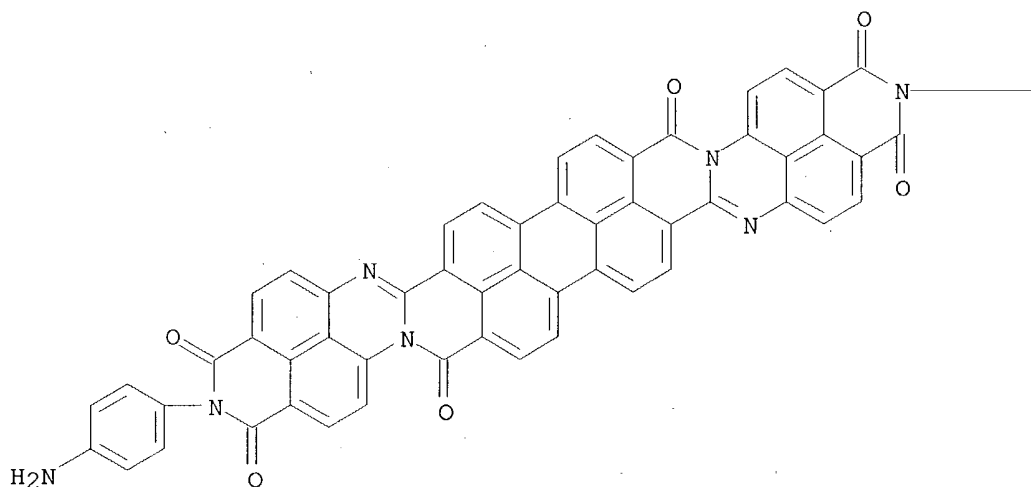
CN Undecanoic acid, 11-amino-, polymer with 2,16-bis(4-aminophenyl)dipyrido[3,4,5-gh:3',4',5'-g'h']anthra[2'',1'',9'':4,5,6;6'',5'',10'':4',5',6']diisoquino[2,1-a:2',1'-a']diperimidine-1,3,11,15,17,25(2H,16H)-hexone and 2,17-bis(4-aminophenyl)dipyrido[3,4,5-gh:3',4',5'-g'h']phenanthro[2'',1'',10'':4,5,6;7'',8'',9'':4',5',6']diisoquino[2,1-a:2',1'-a']diperimidine-1,3,7,12,16,18(2H,17H)-hexone (9CI) (CA INDEX NAME)

CM 1

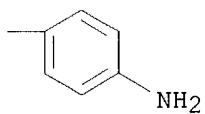
CRN 51555-32-9

CMF C60 H28 N8 O6

PAGE 1-A



PAGE 1-B

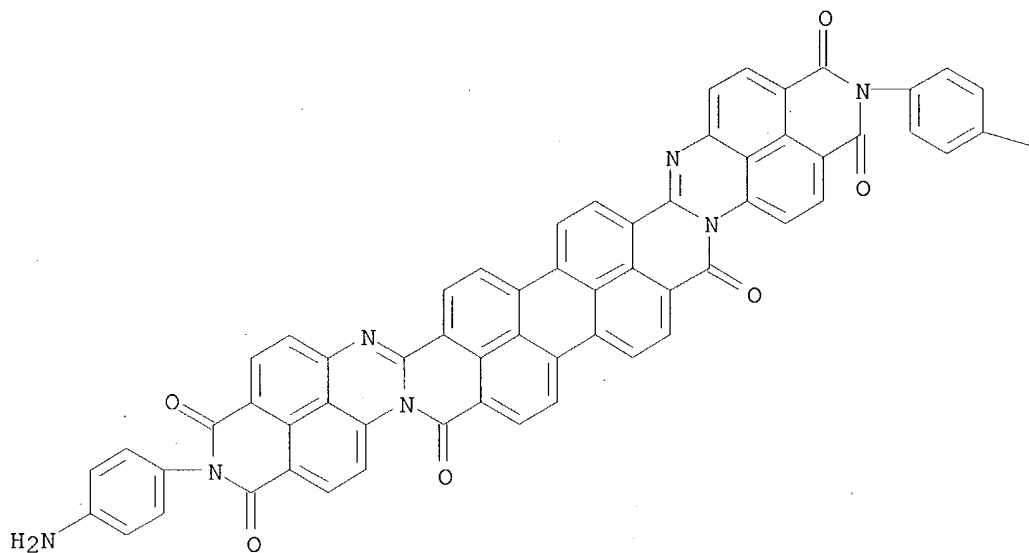


CM 2

CRN 49546-26-1

CMF C60 H28 N8 O6

PAGE 1-A



PAGE 1-B

—NH₂

CM 3

CRN 2432-99-7

CMF C11 H23 N O2

HO₂C—(CH₂)₁₀—NH₂

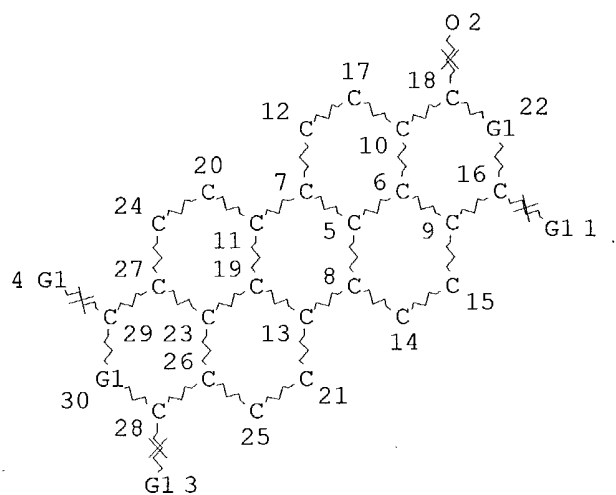
IC C08G

CC 39-2 (Textiles)

IT 51547-63-8 **51555-33-0** 51555-35-2 51635-24-6**51635-25-7 51730-41-7**RL: USES (Uses)
(fiber, colored)

=> d que stat 154

L5 STR



VAR G1=N/O

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

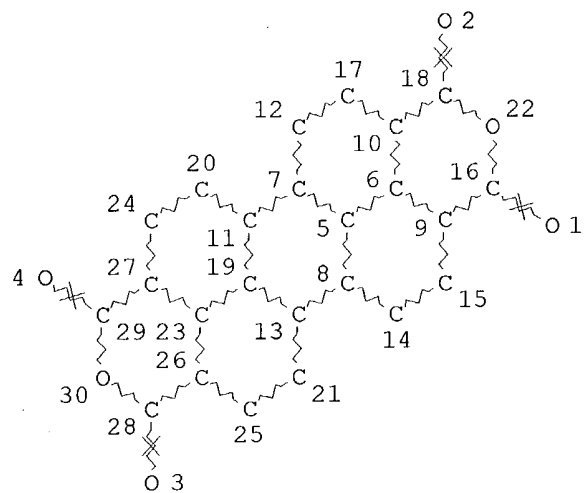
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L7 3048 SEA FILE=REGISTRY SSS FUL L5

L8 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

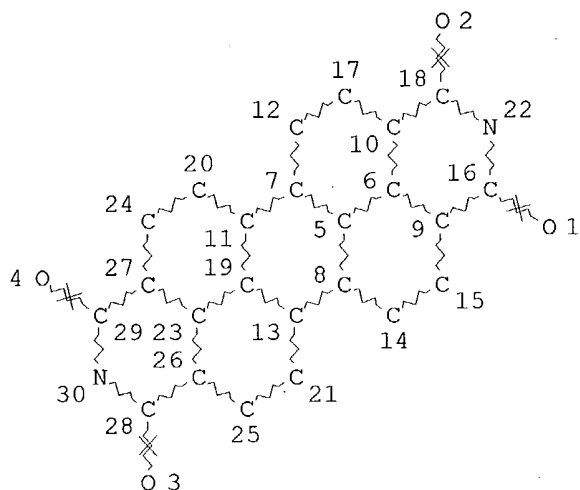
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 30

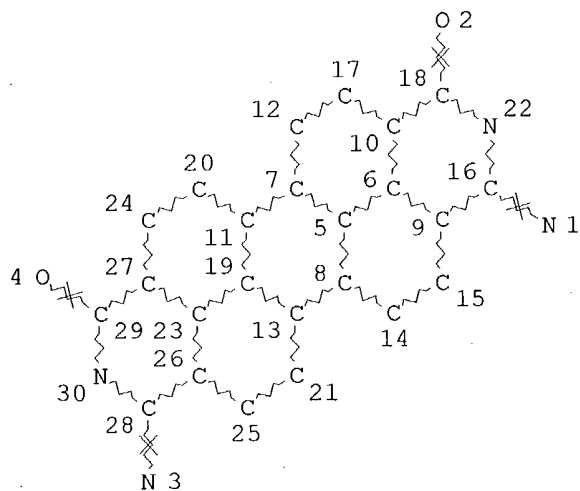
STEREO ATTRIBUTES: NONE
L9 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE
L10 STR

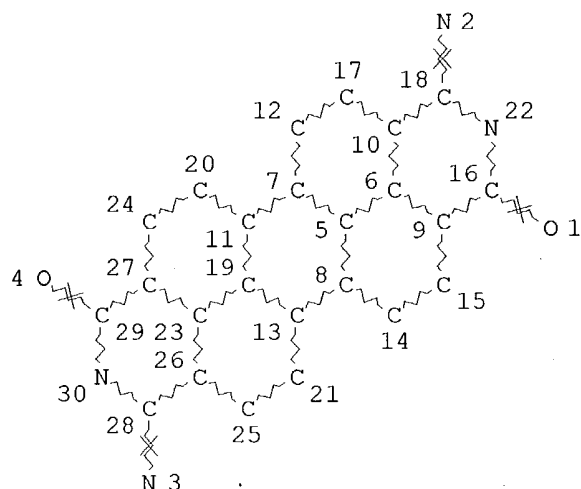


NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L11 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L13 127 SEA FILE=REGISTRY SUB=L7 SSS FUL L8
 L15 2408 SEA FILE=REGISTRY SUB=L7 SSS FUL L9
 L17 142 SEA FILE=REGISTRY SUB=L7 SSS FUL L10
 L19 149 SEA FILE=REGISTRY SUB=L7 SSS FUL L11
 L28 1033 SEA FILE=HCA ABB=ON PLU=ON L13
 L29 2735 SEA FILE=HCA ABB=ON PLU=ON L15
 L30 225 SEA FILE=HCA ABB=ON PLU=ON L17
 L31 343 SEA FILE=HCA ABB=ON PLU=ON L19
 L32 394 SEA FILE=HCA ABB=ON PLU=ON L28 AND L29
 L33 43 SEA FILE=HCA ABB=ON PLU=ON L28 AND L30
 L34 50 SEA FILE=HCA ABB=ON PLU=ON L28 AND L31
 L35 65 SEA FILE=HCA ABB=ON PLU=ON L29 AND L30
 L36 100 SEA FILE=HCA ABB=ON PLU=ON L29 AND L31
 L37 190 SEA FILE=HCA ABB=ON PLU=ON L30 AND L31
 L38 649 SEA FILE=HCA ABB=ON PLU=ON (L32 OR L33 OR L34 OR L35 OR L36 OR L37)
 L39 33 SEA FILE=HCA ABB=ON PLU=ON L38 AND BLACK
 L40 2126184 SEA FILE=HCA ABB=ON PLU=ON CALEFACT? OR TORREFACT? OR PYROL? OR SINTER? OR CALCIN? OR AUTOCLAV? OR THERMOL? OR THERMAL? OR TEPEFACT? OR MELT? OR FUSE# OR FUSING# OR FUSION?
 L41 65 SEA FILE=HCA ABB=ON PLU=ON L38 AND L40
 L42 1 SEA FILE=HCA ABB=ON PLU=ON L39 AND L41
 L43 1608840 SEA FILE=HCA ABB=ON PLU=ON BURN? OR CHARR? OR COMBUST? OR IGNIT? OR CARBONIZ? OR SCORCH? OR SING? OR INCINERAT?
 L44 43 SEA FILE=HCA ABB=ON PLU=ON L38 AND L43
 L45 2 SEA FILE=HCA ABB=ON PLU=ON L44 AND BLACK
 L46 35 SEA FILE=HCA ABB=ON PLU=ON L38 AND (MIXT# OR MIXTURE? OR BLEND? OR ADMIX? OR COMMIX? OR IMMIX? OR INTERMIX? OR COMPOSIT? OR COMPN# OR COMPSN# OR FORMULAT? OR INTERSPER?)/TI
 L47 8 SEA FILE=HCA ABB=ON PLU=ON L46 AND L39

L48 3 SEA FILE=HCA ABB=ON PLU=ON L46 AND L41
 L49 2 SEA FILE=HCA ABB=ON PLU=ON L46 AND L44
 L51 441247 SEA FILE=HCA ABB=ON PLU=ON BURN? OR CHARR? OR COMBUST? OR
 IGNIT? OR CARBONIZ? OR SCORCH? OR SINGE# OR SINGING# OR
 INCINERAT?
 L52 4 SEA FILE=HCA ABB=ON PLU=ON L38 AND L51
 L54 15 SEA FILE=HCA ABB=ON PLU=ON L42 OR L45 OR L47 OR L48 OR L49
 OR L52

=> d l54 1-15 cbib abs hitstr hitind

L54 ANSWER 1 OF 15 HCA COPYRIGHT 2004 ACS on STN

140:130469 Novel methods and **compositions** for improved
 electrophoretic display performance. Wu, Zarnng-arh George; Haubrich,
 Jeanne E.; Wang, Xiaojia; Liang, Rong-chang (Sipix Imaging, Inc., USA).
 PCT Int. Appl. WO 2004010206 A2 20040129, 38 pp. DESIGNATED STATES: W:
 AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO,
 CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR,
 HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,
 LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT,
 RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG,
 UZ, VC, VN, YU, ZA, ZM, ZW, AM; RW: AT, BE, BF, BJ, CF, CG, CH, CI,
 CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE,
 NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO
 2003-US21681 20030710. PRIORITY: US 2002-PV396680 20020717.

AB The invention is directed to novel methods and compns. useful for
 improving the performance of electrophoretic displays. The methods
 comprise adding a high absorbance dye or pigment, or conductive particles
 or a charge transport material into an electrode protecting layer of the
 display.

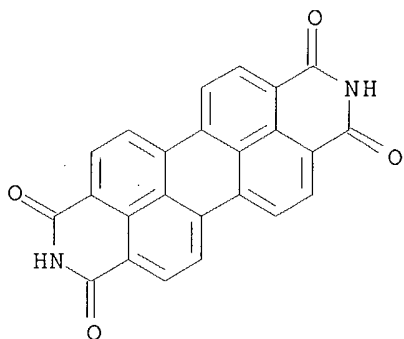
IT **81-33-4 59765-31-0 94665-89-1**

RL: DEV (Device component use); TEM (Technical or engineered material
 use); USES (Uses)

(dyes, pigments, crosslinking sealants and adhesives, and conducting
 polymer components and novel methods and compns. for improved
 electrophoretic display performance)

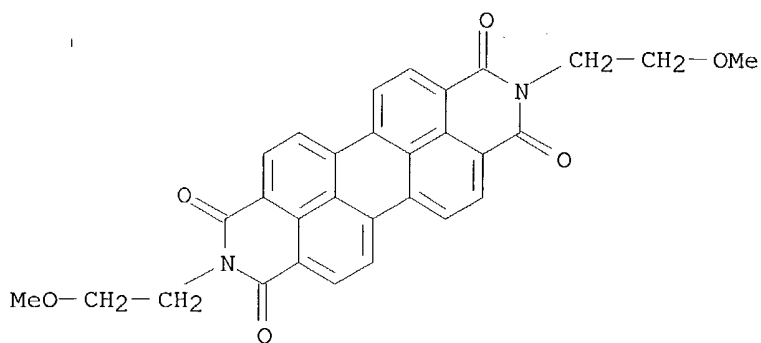
RN 81-33-4 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone
 (9CI) (CA INDEX NAME)

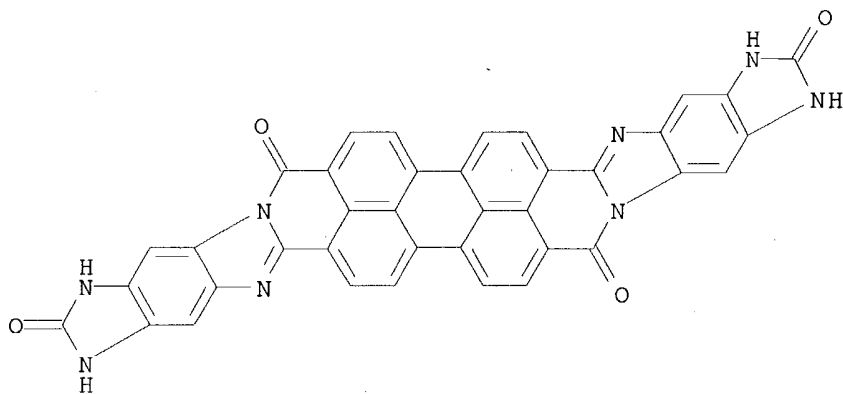


RN 59765-31-0 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis(2-methoxyethyl)- (9CI) (CA INDEX NAME)



RN 94665-89-1 HCA
 CN Bisimidazo[4',5':5,6]benzimidazo[2,1-a:2',1'-a']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-2,10,14,22-tetrone, 1,3,13,15-tetrahydro- (9CI) (CA INDEX NAME)



IC ICM G02F001-00
 CC 48-7 (Unit Operations and Processes)
 Section cross-reference(s): 29, 35, 38, 74, 76
 IT Carbon **black**, processes
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (Vulcan XC-72, composite sealant with Kraton G-R 6919 and Kraton G 1650; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
 IT Synthetic rubber, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (butadiene-isoprene-styrene, hydrogenated, block, composite sealant with Kraton G 1650 and Carb-O-Sil or carbon **black**; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
 IT Styrene-butadiene rubber, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (hydrogenated, block, triblock, Kraton G 1650, composite with Kraton G-R 6919/Carb-O-Sil or Carbon **black**; dyes, pigments,

crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)

- IT 12227-55-3, Orasol Red BL 12237-23-9, Orasol **Black** CN
61931-55-3, Orasol Yellow 2GLN
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(dye, in Duro-Tak adhesive layer; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 56996-93-1, Sudan **Black** 61901-87-9, Orasol **Black** RLI
71799-11-6, Orasol Blue GL
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(dye, in Duro-Tak adhesive layer; dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)
- IT 74-82-8D, Methane, triaryl derivs. **81-33-4** 85-83-6, Sudan IV
85-86-9, Sudan III 86-74-8D, Carbazole, derivs. 92-52-4D, Biphenyl, derivs. 129-79-3, 2,4,7-Trinitro-9-fluorenone 288-42-6D, Oxazole, derivs. 288-99-3D, 1,3,4-Oxadiazole, 2,5-bis(4-N,N'-dialkylaminophenyl) 486-25-9, Fluorenone 486-25-9D, Fluorenone, oligomers and polymers of 809-73-4 842-07-9, Sudan yellow 966-88-1D, Benzaldehyde-N,N-diphenylhydrazine, p-dialkylamino derivs. 1159-53-1 1229-55-6, Sudan R 1450-63-1, 1,1,4,4-Tetraphenylbutadiene 1484-96-4 1518-16-7 2085-33-8 2417-00-7 2455-14-3 2491-91-0, 2,5-Bis(4-methylphenyl)-1,3,4-oxadiazole 3118-97-6, Sudan II 4197-25-5, Sudan **Black**
B 5152-94-3 7429-90-5, Aluminum, uses 7429-90-5D, Aluminum, alloys 7439-89-6, Iron, uses 7439-89-6D, Iron, alloys 7440-02-0D, Nickel, alloys 7440-22-4, Silver, uses 7440-22-4D, Silver, alloys 7440-50-8, Copper, uses 7440-50-8D, Copper, alloys 7440-57-5, Gold, uses 7440-57-5D, Gold, alloys 7440-74-6, Indium, uses 7440-74-6D, Indium, alloys 7782-42-5, Graphite, uses 9003-39-8, Polyvinylpyrrolidone 9003-55-8, Styrene-butadiene copolymer 11120-54-0D, Oxadiazole, derivs. 12673-86-8, Antimony tin oxide 14705-63-6 14705-63-6D, alkylated and alkoxyated derivs. 14752-00-2 15546-43-7, N,N,N',N'-Tetraphenylbenzidine 20441-06-9 23467-27-8 24937-78-8, Ethylene-vinyl acetate copolymer 26009-24-5, Poly(p-phenylene vinylene) 33200-26-9 35079-58-4 35458-94-7 36118-45-3D, Pyrazoline, Ph dialkylaminostyrene dialkylaminophenyl derivs. 36118-45-3D, Pyrazoline, derivs. 41584-66-1 43134-09-4 51325-95-2 58280-31-2 58328-31-7, 4,4'-Bis(carbazol-9-yl)biphenyl 58473-78-2 **59765-31-0**
59869-79-3 69361-50-8D, bis(4-N,N-dialkylamino) 75232-44-9 76185-65-4 82532-76-1 83992-95-4 85171-94-4 89114-90-9 89114-91-0 89991-16-2 93376-18-2, (4-Butoxycarbonyl-9-fluorenylidene)malononitrile 93975-08-7 93975-09-8 **94665-89-1**
95270-88-5, Polyfluorene 95993-52-5 96492-45-4 97671-90-4 103079-11-4 105389-36-4, 4,4',4'''-Tris(N,N-diphenylamino)triphenylamine 117944-65-7, Indium zinc oxide 123847-85-8 126213-51-2, Poly(3,4-ethylenedioxythiophene) 127022-77-9, Hexakis(benzylthio)benzene 138171-14-9 138372-67-5 139092-78-7 139255-17-7 141752-82-1 142289-08-5 150405-69-9 154896-84-1 164534-25-2 174493-15-3 182507-83-1 184101-39-1 185690-39-5, 4,4',4'''-Tris[N-(1-naphthyl)-N-phenylamino]triphenylamine 203799-76-2 254435-83-1, Sudan Blue 376386-75-3 482654-95-5 649735-34-2 649735-35-3 649735-37-5D, 2,5-bis(4-dialkylaminophenyl) derivs. 649735-38-6 650609-45-3 650609-46-4 650609-47-5 650609-48-6
RL: DEV (Device component use); TEM (Technical or engineered material

use); USES (Uses)

(dyes, pigments, crosslinking sealants and adhesives, and conducting polymer components and novel methods and compns. for improved electrophoretic display performance)

L54 ANSWER 2 OF 15 HCA COPYRIGHT 2004 ACS on STN

138:273056 Radiation-curable isocyanate-containing **compositions** and their use as dispersants. Carlson, James G.; Lee, Jennifer L.; Hunt, William J. (3M Innovative Properties Company, USA). PCT Int. Appl. WO 2003027162 A1 20030403, 41 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DE, DK, DM, DZ, EC, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-US30383 20020925. PRIORITY: US 2001-PV324679 20010925.

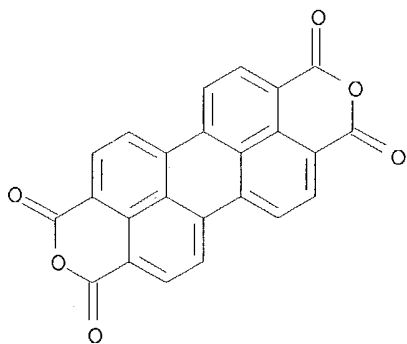
AB The title compns. comprise the reaction product of: a. a polyisocyanate; b. at least one radiation curable oligomer comprising at least one radiation curable group, wherein the oligomer has a mol. weight of greater than about 1000 g per mol; and c. at least one polar component comprising at least one isocyanate-reactive group and at least one polar group. The compns. are useful as curable dispersants for inks or coatings.

IT **128-69-8**, Pigment Red 224 **5521-31-3**, Pigment Red 179

RL: TEM (Technical or engineered material use); USES (Uses)
(radiation-curable isocyanate-containing compns. and their use as dispersants)

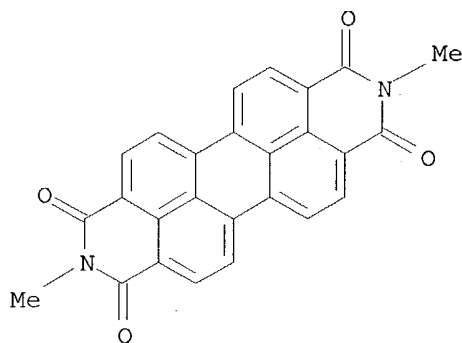
RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



RN 5521-31-3 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-dimethyl- (9CI) (CA INDEX NAME)



IC ICM C08G018-68
 ICS C08G018-67; C08G018-08; C09D011-00; C08L075-16
 CC 42-5 (Coatings, Inks, and Related Products)
 IT Carbon **black**, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (radiation-curable isocyanate-containing compns. and their use as dispersants)

IT 61-82-5, 3-Amino-1,2,4-triazole 96-50-4, 2-Amino-thiazole 108-00-9, N,N-Dimethylethylene diamine 108-01-0, N,N-Dimethyl-ethanolamine 109-12-6, 2-Aminopyrimidine **128-69-8**, Pigment Red 224 147-14-8, Pigment Blue 15:3 462-08-8, 3-Aminopyridine 504-24-5, 4-Aminopyridine 504-29-0, 2-Aminopyridine 591-54-8, 4-Aminopyrimidine 622-40-2, 4-Morpholineethanol 695-34-1, 2-Amino-4-methylpyridine 1328-53-6, Pigment Green 7 2706-56-1, 2-(2-Aminoethyl)pyridine 3089-17-6, Pigment Red 202 3731-51-9, 2-(Aminomethyl)pyridine 3731-52-0, 3-(Aminomethyl)pyridine 3731-53-1, 4-(Aminomethyl)pyridine 3779-63-3 5049-61-6, Aminopyrazine 5344-27-4, 4-2-Hydroxyethylpyridine **5521-31-3**, Pigment Red 179 7552-07-0, 5-Amino-1,2,4-thiadiazole 16596-41-1, Pyrrolidylamine 25157-64-6, Pigment Yellow 150 81984-58-9 110489-05-9 114024-26-9, Aminopyrazole
 RL: TEM (Technical or engineered material use); USES (Uses)
 (radiation-curable isocyanate-containing compns. and their use as dispersants)

L54 ANSWER 3 OF 15 HCA COPYRIGHT 2004 ACS on STN
 138:138774 **Black** perylene pigment prepared by **burning** **mixt.** of perylenetetracarboxylic dianhydride, perylenetetracarboxylic diimides, and/or perylenediiminodicarboxylic diimides. Mizuguchi, Jin; Shimo, Nobuya (Toda Kogyo Corp., Japan; Yokohama TLO Company, Ltd.). PCT Int. Appl. WO 2003010242 A1 20030206, 24 pp. DESIGNATED STATES: W: AE, AG, AL, AU, BA, BB, BG, BR, BZ, CA, CN, CO, CR, CU, CZ, DM, DZ, EC, EE, GD, GE, HR, HU, ID, IL, IN, IS, KP, KR, LC, LK, LR, LT, LV, MA, MG, MK, MN, MX, NO, NZ, OM, PH, PL, RO, SG, SI, SK, TN, TT, UA, US, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2002-JP7603 20020726. PRIORITY: JP 2001-227693 20010727.

AB The **black** perylene pigment comprises a solid solution obtained by **burning** a mixture of ≥ 2 compds. selected from perylenetetracarboxylic dianhydride, perylenetetracarboxylic diimides, and perylenediiminodicarboxylic diimides under vacuum or in an inert gas atmospheric at 100-600°. The **black** perylene pigments have good

blackness, heat resistance and weatherability and high elec. resistance, and are useful for inks, coatings, electrophotog. tones, rubbers, plastics, etc.

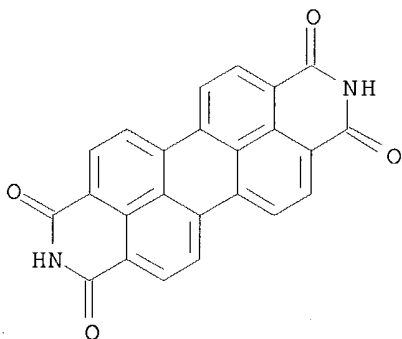
IT 81-33-4 128-69-8 55034-79-2 55034-81-6
494224-70-3 494224-71-4

RL: RCT (Reactant); RACT (Reactant or reagent)

(**black** perylene pigment prepared by **burning** mixture of perylenetetracarboxylic dianhydride, perylenetetracarboxylic diimides, and/or perylenediiminodicarboxylic diimides)

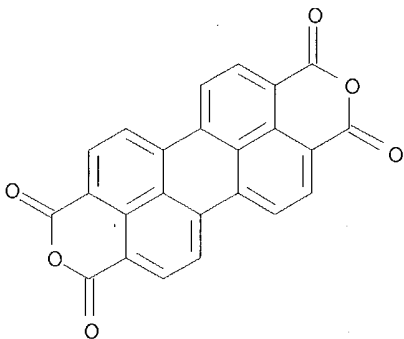
RN 81-33-4 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone (9CI) (CA INDEX NAME)



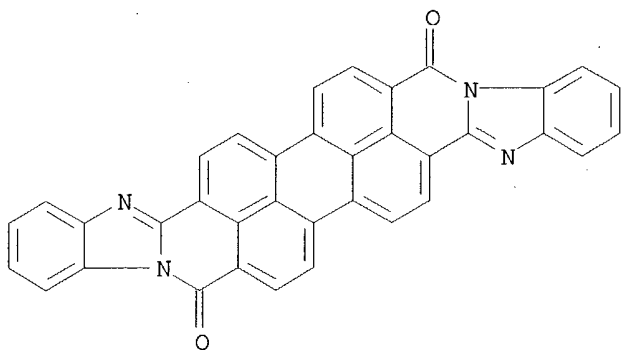
RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyrans-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



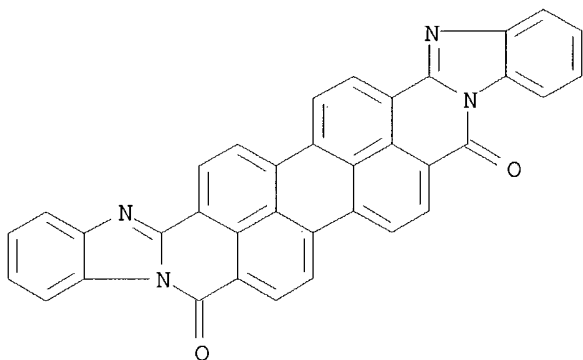
RN 55034-79-2 HCA

CN Bisbenzimidazo[2,1-a:2',1'-a']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-10,21-dione (9CI) (CA INDEX NAME)



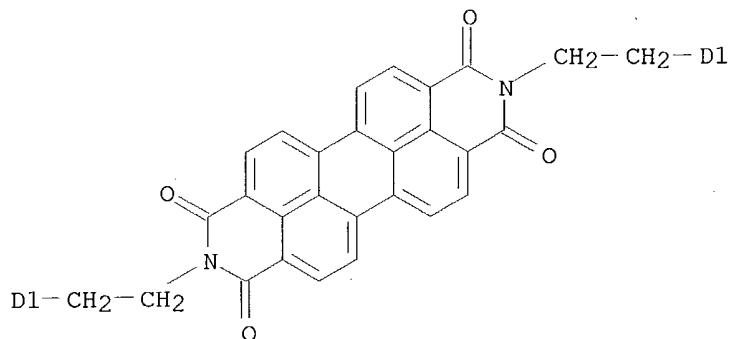
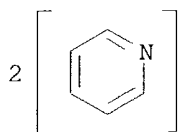
RN 55034-81-6 HCA

CN Bisbenzimidazo[2,1-a:1',2'-b']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-6,11-dione (9CI) (CA INDEX NAME)

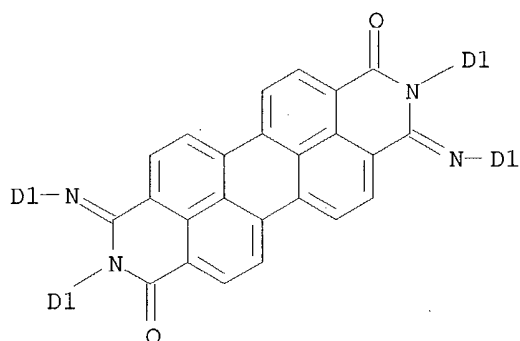
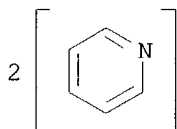


RN 494224-70-3 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis[2-(pyridinyl)ethyl]- (9CI) (CA INDEX NAME)



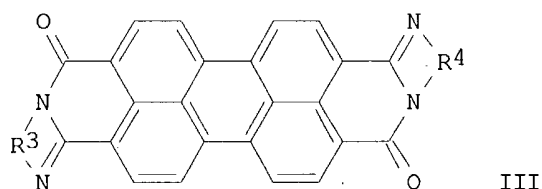
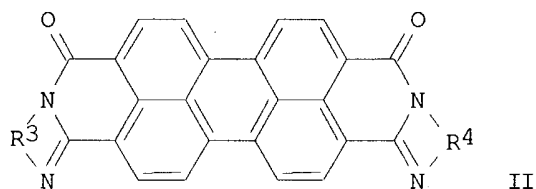
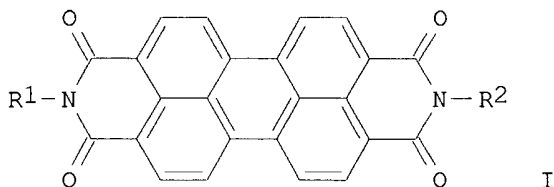
RN 494224-71-4 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,8-dione,
 2,3,9,10-tetrahydro-3,2:10,9-bis(nitrilopyridinediyl)- (9CI) (CA INDEX
 NAME)



IC ICM C09B067-22
 ICS C09B005-62; C09B067-20
 CC 41-8 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic
 Sensitizers)
 Section cross-reference(s): 38, 39, 42, 74
 ST **black** perylene pigment manuf; perylenecarboxylic anhydride imide
burning pigment manuf
 IT Pigments, nonbiological
 (**black**; **black** perylene pigment prepared by
burning mixture of perylenetetracarboxylic dianhydride,
 perylenetetracarboxylic diimides, and/or perylenediiminodicarboxylic
 diimides)
 IT **81-33-4 128-69-8 55034-79-2 55034-81-6**
494224-70-3 494224-71-4
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (**black** perylene pigment prepared by **burning** mixture of
 perylenetetracarboxylic dianhydride, perylenetetracarboxylic diimides,
 and/or perylenediiminodicarboxylic diimides)
 L54 ANSWER 4 OF 15 HCA COPYRIGHT 2004 ACS on STN
 138:138773 **Black** perylene pigment prepared by **burning**
 perylenetetracarboxylic diimides or perylenediiminodicarboxylic diimides.
 Mizuguchi, Jin; Shimo, Nobuya (Toda Kogyo Corp., Japan; Yokohama TLO
 Company, Ltd.). PCT Int. Appl. WO 2003010241 A1 20030206, 21 pp.
 DESIGNATED STATES: W: AE, AG, AL, AU, BA, BB, BG, BR, BZ, CA, CN, CO, CR,
 CU, CZ, DM, DZ, EC, EE, GD, GE, HR, HU, ID, IL, IN, IS, KP, KR, LC, LK,
 LR, LT, LV, MA, MG, MK, MN, MX, NO, NZ, OM, PH, PL, RO, SG, SI, SK, TN,
 TT, UA, US, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT,
 BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE,
 IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN:
 PIXXD2. APPLICATION: WO 2002-JP7602 20020726. PRIORITY: JP 2001-227694

20010727.

GI



AB The **black** perylene pigment is manufactured by **burning** ≥ 1 compound selected diimide derivs. of perylenetetracarboxylic acid and diimide derivs. of perylenediiminodicarboxylic acid I, II and III (R_1 , R_2 = Bu, phenylethyl, methoxyethyl, 4-methoxyphenylmethyl; R_3 , R_4 = (un)substituted phenylene, (un)substituted pyridinyl, naphthalenyl) under vacuum or in an inert gas atmosphere at 200-600°. The **black** perylene pigments have good blackness, heat resistance and weatherability and high elec. resistance, and are useful for inks, coatings, electrophotog. tones, rubbers, plastics, etc.

IT 52000-75-6 55034-79-2 55034-81-6

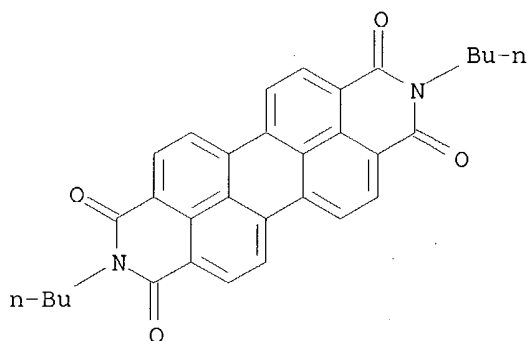
RL: RCT (Reactant); RACT (Reactant or reagent)

(**black** perylene pigment prepared by **burning**

perylenetetracarboxylic diimides or perylenediiminodicarboxylic diimides)

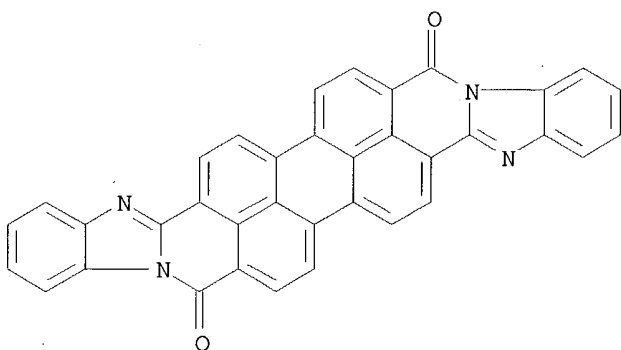
RN 52000-75-6 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-dibutyl- (9CI) (CA INDEX NAME)



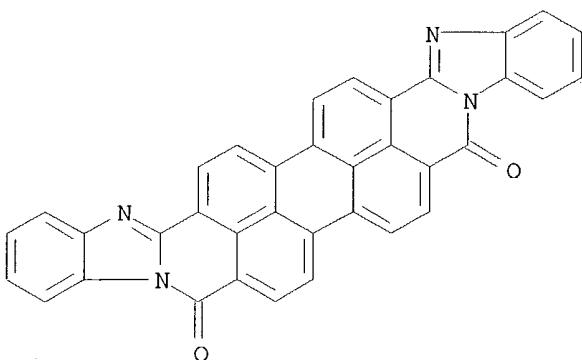
RN 55034-79-2 HCA

CN Bisbenzimidazo[2,1-a:2',1'-a']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-10,21-dione (9CI) (CA INDEX NAME)



RN 55034-81-6 HCA

CN Bisbenzimidazo[2,1-a:1',2'-b']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-6,11-dione (9CI) (CA INDEX NAME)



IC ICM C09B067-20

ICS C09B005-62

CC 41-8 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 38, 39, 42, 74

ST **black** perylene pigment manuf; perylenecarboxylic imide
burning black perylene pigment

IT Pigments, nonbiological

(**black; black** perylene pigment prepared by **burning** perylenetetracarboxylic diimides or perylenediiminodicarboxylic diimides)

IT 52000-75-6 55034-79-2 55034-81-6

RL: RCT (Reactant); RACT (Reactant or reagent)

(**black** perylene pigment prepared by **burning** perylenetetracarboxylic diimides or perylenediiminodicarboxylic diimides)

L54 ANSWER 5 OF 15 HCA COPYRIGHT 2004 ACS on STN

137:64701 Weather-resistant, ink-jettable, radiation-curable, fluid

compositions particularly suitable for outdoor print applications.

Lee, Jennifer L.; Thery, Ronald K.; Ylitalo, Caroline M.; Severance, Richard L.; Wu, Dong; Nerad, Bruce A.; Lemire, Verna J.; Carlson, James G.; Hunt, William J. (3M Innovative Properties Company, USA). U.S. Pat. Appl. Publ. US 2002086914 A1 20020704, 20 pp., Cont.-in-part of U. S. Ser. No. 711,336, abandoned. (English). CODEN: USXXCO. APPLICATION: US 2001-8235.20011107. PRIORITY: US 2000-711336 20001109.

AB Low viscosity, radiation-curable fluid formulations contain (a) an oligo/resin component, (b) a radiation curable, reactive diluent comprising (i) 0.1-50% of an adhesion promoting, radiation-curable component containing ≥ 1 heterocyclic, radiation-curable monomer and/or an alkoxyated monomer with pendant alkoxyated functionality and no main chain alkoxyated functionality and (ii) $\leq 10\%$ of an optional alkoxyated, radiation curable monomer containing main-chain alkoxyated functionality, optionally a high Tg component and multifunctional monomer. After curing, the comps. form durable, weatherable, abrasion-resistant, printed images on a wide variety of porous and nonporous substrates, e.g. including vinyl or other polymer films commonly used for signage, retroreflective signage or other retroreflective items. The composition of a red ink contained 4.25 parts C.I. Pigment Red 179, 4.25 parts C.I. Pigment Red 224, 10 parts hexanediol diacrylate, 14 parts isobornyl acrylate, 42 parts 2-(2-ethoxyethoxy)ethyl acrylate, 20 parts Sartomer CN 964B85, 3 parts EFKA 4046, and 2.5 parts Irgacure 819. The ink had power law index 0.97, viscosity (25° and 1000 s-1) 32.4 cP, and 10 cP (52° at 1000 s-1).

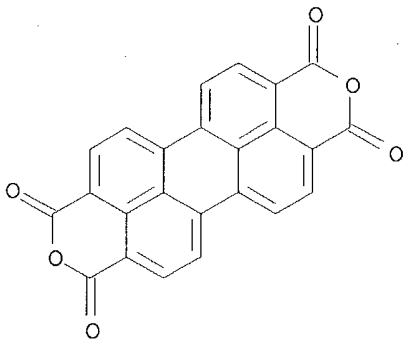
IT 128-69-8, C.I. Pigment Red 224 5521-31-3, C.I. Pigment Red 179

RL: TEM (Technical or engineered material use); USES (Uses)

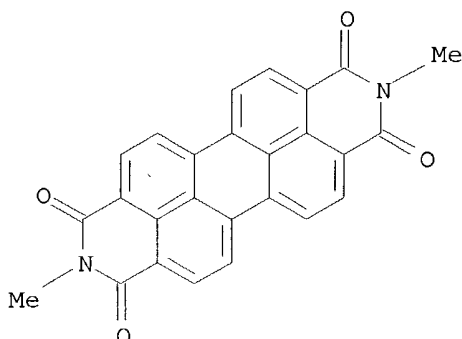
(pigment; mar- and weather-resistant UV-curable inks for films for outdoor applications)

RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



RN 5521-31-3 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-dimethyl- (9CI) (CA INDEX NAME)



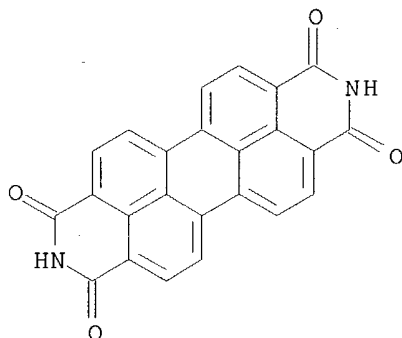
IC ICM C08F002-46
 ICS C08J003-28; C08K003-00
 NCL 522075000
 CC 42-12 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 74
 IT Carbon **black**, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (Lamp **Black** LB 101 Pigment I; mar- and weather-resistant
 UV-curable inks for films for outdoor applications)
 IT **128-69-8**, C.I. Pigment Red 224 3089-17-6, RT 343D
5521-31-3, C.I. Pigment Red 179 25157-64-6, Fanchon Fast Yellow
 Y 5688
 RL: TEM (Technical or engineered material use); USES (Uses)
 (pigment; mar- and weather-resistant UV-curable inks for films for
 outdoor applications)

L54 ANSWER 6 OF 15 HCA COPYRIGHT 2004 ACS on STN

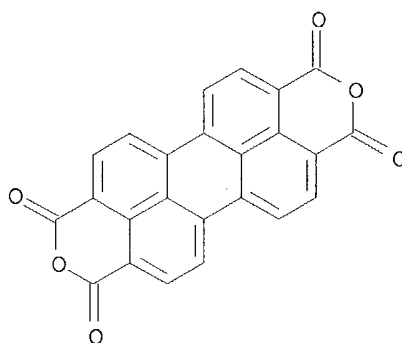
137:48617 Rheology improvers and pigment **compositions** having
 improved rheology and their use. Bugnon, Philippe (Ciba Specialty
 Chemicals Holding Inc., Switz.). PCT Int. Appl. WO 2002048269 A1
 20020620, 24 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA,
 BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE,
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,
 KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ,
 OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA,
 UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW:
 AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR,
 IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English).
 CODEN: PIXXD2. APPLICATION: WO 2001-EP14178 20011204. PRIORITY: CH
 2000-2428 20001213; CH 2001-1646 20010905.

AB The invention relates to pigment-based compds. of the 1-
 aminoanthraquinone, anthanthrone, anthrapyrimidine, quinacridone,
 dioxazine, diketopyrrolopyrrole, flavanthrone, indanthrone, isoindolinone,
 isoviolanthrone, perinone, perylene, phthalocyanine, pyranthrone or
 thioindigo series, having one or more sulfonate groups and accompanied by
 cations comprised of quaternary ammonium groups or Ca salts, the compds.
 being suitable for use as pigment dispersants and rheol. improvers. Also
 claimed are modified pigments having such compds. on their surfaces and
 also pigment compns. and dispersions comprising these compds. These
 compds. are useful in coloring of polymeric material and have improved
 properties compared to prior-art substances.

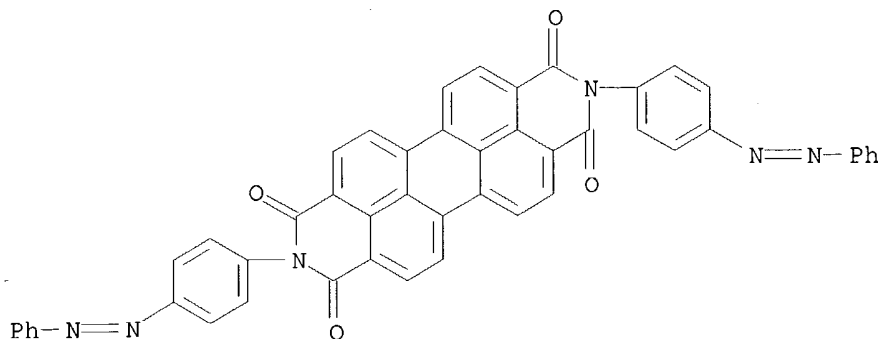
IT **81-33-4**, C.I. Pigment Violet 29 **128-69-8**, C.I. Pigment Red 224 **3049-71-6**, C.I. Pigment Red 178 **4948-15-6**, C.I. Pigment Red 149 **5521-31-3**, C.I. Pigment Red 179 **6424-77-7**, C.I. Pigment Red 190 **67075-37-0**, C.I. Pigment **Black** 31 **83524-75-8**, C.I. Pigment **Black** 32
 RL: TEM (Technical or engineered material use); USES (Uses) (dispersants and rheol. improvers for pigment compns.)
 RN 81-33-4 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone (9CI) (CA INDEX NAME)



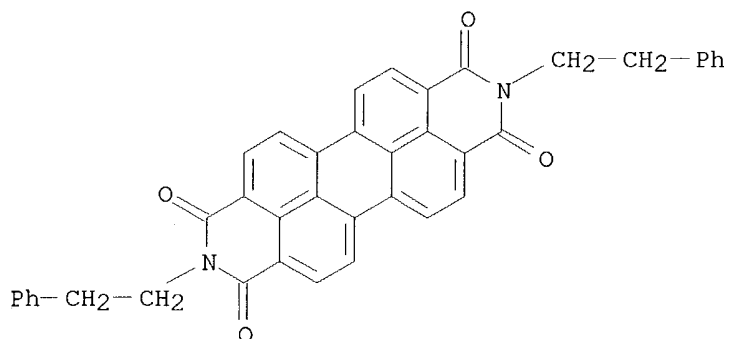
RN 128-69-8 HCA
 CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



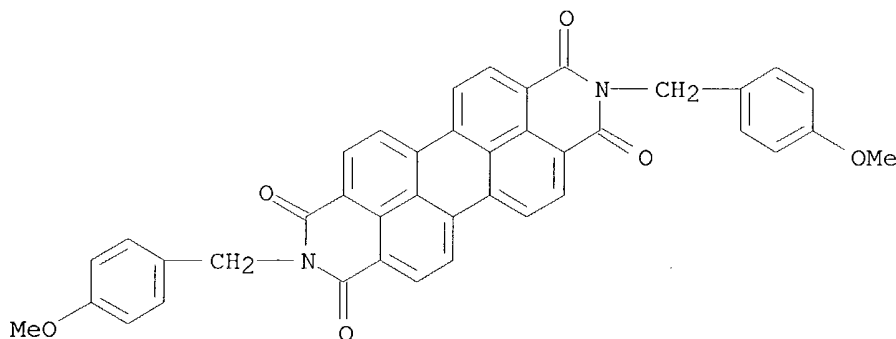
RN 3049-71-6 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis[4-(phenylazo)phenyl]- (9CI) (CA INDEX NAME)



2,9-bis(2-phenylethyl)- (9CI) (CA INDEX NAME)



RN 83524-75-8 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis[(4-methoxyphenyl)methyl]- (9CI) (CA INDEX NAME)

IC ICM C09B069-02

ICS C09B067-22

CC 42-6 (Coatings, Inks, and Related Products)

IT **81-33-4**, C.I. Pigment Violet 29 81-77-6, C.I. Pigment Blue 60
128-69-8, C.I. Pigment Red 224 128-70-1, C.I. Pigment Orange 40
 130-20-1, C.I. Pigment Blue 64 147-14-8, C.I. Pigment Blue 15
 475-71-8, C.I. Pigment Yellow 24 574-93-6, C.I. Pigment Blue 16
 980-26-7, C.I. Pigment Red 122 1047-16-1, C.I. Pigment Violet 19
 1324-55-6, C.I. Pigment Violet 31 1328-53-6, C.I. Pigment Green 7
 2379-74-0, C.I. Pigment Red 181 **3049-71-6**, C.I. Pigment Red 178
 3089-17-6, C.I. Pigment Red 202 3573-01-1, C.I. Pigment Red 209
 4028-94-8, C.I. Pigment Yellow 123 4051-63-2, C.I. Pigment Red 177
 4118-16-5, C.I. Pigment Yellow 147 4216-01-7, C.I. Pigment Yellow 108
 4216-02-8, C.I. Pigment Red 194 4378-61-4, C.I. Pigment Red 168
 4424-06-0, C.I. Pigment Orange 43 **4948-15-6**, C.I. Pigment Red
 149 5045-40-9, C.I. Pigment Yellow 109 **5521-31-3**, C.I. Pigment
 Red 179 5590-18-1, C.I. Pigment Yellow 110 6409-74-1, C.I. Pigment Red
 89 **6424-77-7**, C.I. Pigment Red 190 14295-43-3, C.I. Pigment
 Red 88 14302-13-7, C.I. Pigment Green 36 17741-63-8, C.I. Pigment
 Violet 37 40716-47-0, C.I. Pigment Orange 61 51016-63-8, C.I. Pigment
 Yellow 173 54660-00-3, C.I. Pigment Red 255 61512-61-6, C.I. Pigment
 Orange 51 61968-81-8, C.I. Pigment Red 192 **67075-37-0**, C.I.
 Pigment **Black** 31 69166-06-9 70321-14-1, C.I. Pigment Yellow
 193 71819-74-4, C.I. Pigment Orange 48 71819-75-5, C.I. Pigment Orange
 49 71819-76-6, C.I. Pigment Red 206 71819-77-7, C.I. Pigment Red 207

71819-79-9, C.I. Pigment Violet 42 72828-01-4, C.I. Pigment Red 226
83524-75-8, C.I. Pigment **Black** 32 84632-50-8, C.I.
 Pigment Orange 71 84632-59-7, C.I. Pigment Orange 73 84632-65-5, C.I.
 Pigment Red 254 88949-33-1, C.I. Pigment Red 264 93050-92-1D,
 Indanthrone blue, disulfonated 123617-54-9 136897-58-0, C.I. Pigment
 Yellow 199 211502-19-1, C.I. Pigment Red 262 215247-95-3, C.I. Pigment
 Violet 23 251086-13-2, C.I. Pigment Red 270 350249-32-0, C.I. Pigment
 Red 272 438231-79-9, Pigment Red 204 438232-27-0, Vat Red 74
 RL: TEM (Technical or engineered material use); USES (Uses)
 (dispersants and rheol. improvers for pigment compns.)

L54 ANSWER 7 OF 15 HCA COPYRIGHT 2004 ACS on STN

137:48616 Rheology improvers and pigment **compositions** having
 improved rheology and their use. Bugnon, Philippe (Ciba Specialty
 Chemicals Holding Inc., Switz.). PCT Int. Appl. WO 2002048268 A1
 20020620, 25 pp. DESIGNATED STATES: W: AM, AT, BA, BB, BY, CH, CU, DK,
 EC, ES, FI, GB, HU, ID, IL, IN, KE, KG, LC, LT, MD, MK, MN, MW, PT, RO,
 RU, SD, SG, SI, SK, TM, TT, UA, UG, VN, KG, MD, RU, TJ, TM; RW: BE, CH,
 CM, DK, GB, GR, IE, IT, LU, ML, NE, NL, SN, TD, TG. (English). CODEN:
 PIXXD2. APPLICATION: WO 2001-EP14176 20011204. PRIORITY: CH 2000-2429
 20001213; CH 2001-1647 20010905.

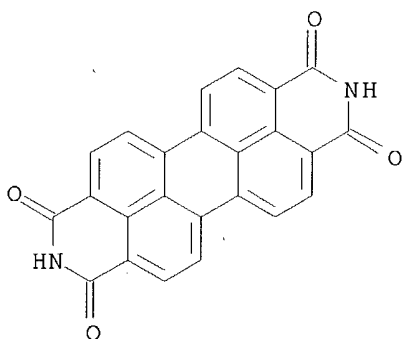
AB The invention relates to pigment-based compds. of the 1-
 aminoanthraquinone, anthanthrone, anthrapyrimidine, quinacridone,
 dioxazine, diketopyrrolopyrrole, flavanthrone, indanthrone, isoindolinone,
 isoviolanthrone, perinone, perylene, phthalocyanine, pyranthrone, or
 thioindigo series, having one or more sulfonate groups and accompanied by
 cations comprised of quaternary ammonium groups and/or Ca salts, the
 compds. being suitable for use as pigment dispersants and rheol.
 improvers. Also claimed are modified pigments having such compds. on
 their surfaces, and also pigment compns. and dispersions comprising these
 compds. These compds. are useful in coloring of polymeric material and
 have improved properties compared to prior-art substances.

IT **81-33-4**, C.I. Pigment Violet 29 **128-69-8**, C.I. Pigment
 Red 224 **3049-71-6**, C.I. Pigment Red 178 **4948-15-6**,
 C.I. Pigment Red 149 **5521-31-3**, C.I. Pigment Red 179
6424-77-7, C.I. Pigment Red 190 **67075-37-0**, C.I. Pigment
Black 31 **83524-75-8**, C.I. Pigment **Black** 32

RL: TEM (Technical or engineered material use); USES (Uses)
 (dispersants and rheol. improvers for pigment compns. having improved
 rheol.)

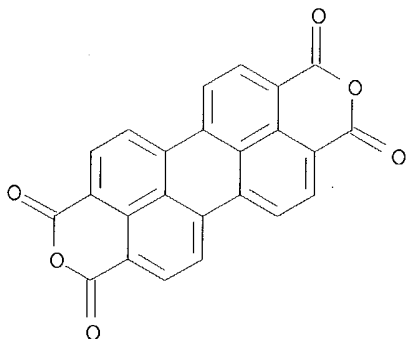
RN 81-33-4 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone
 (9CI) (CA INDEX NAME)



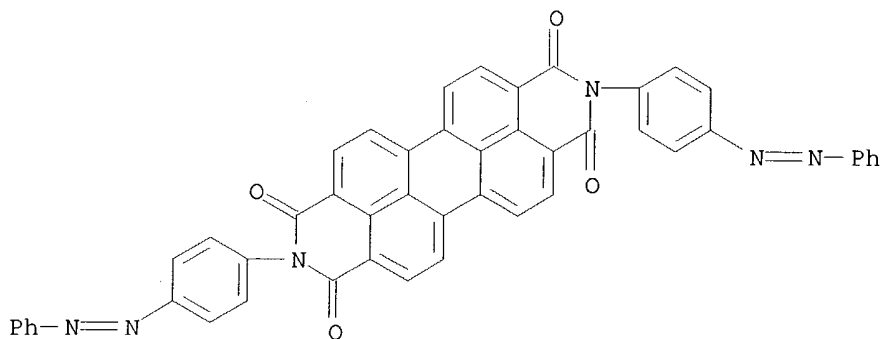
RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME).



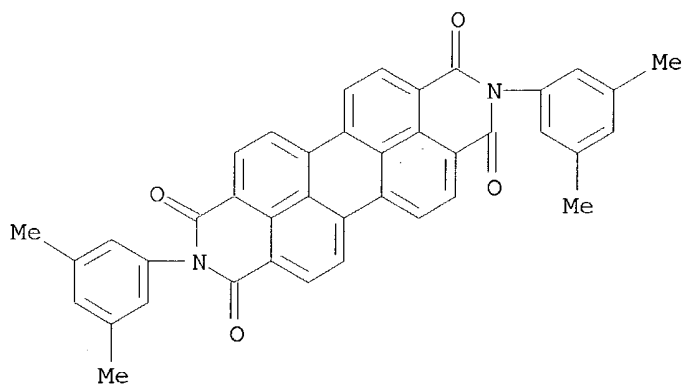
RN 3049-71-6 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis[4-(phenylazo)phenyl]- (9CI) (CA INDEX NAME)



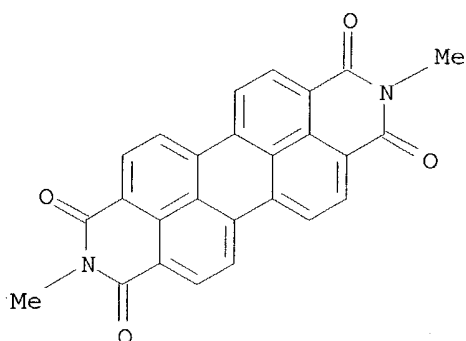
RN 4948-15-6 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis(3,5-dimethylphenyl)- (9CI) (CA INDEX NAME)

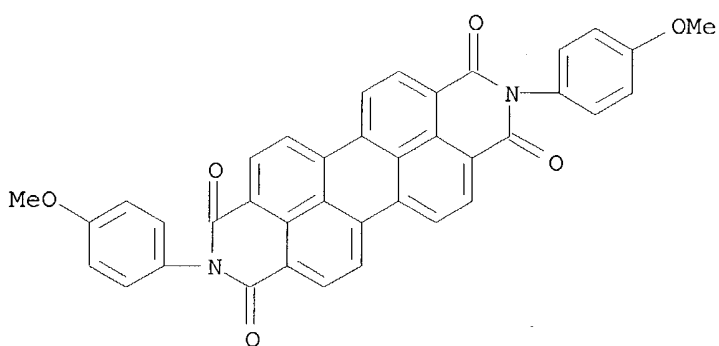


RN 5521-31-3 HCA

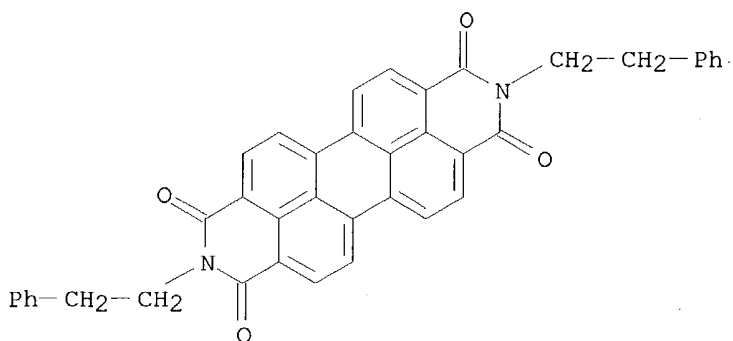
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-dimethyl- (9CI) (CA INDEX NAME)



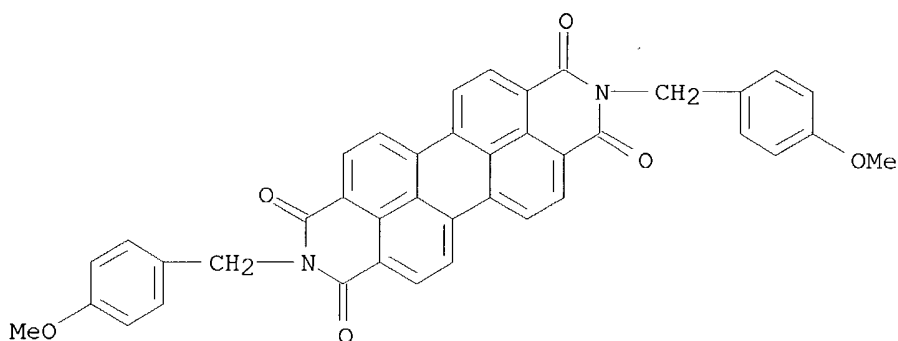
RN 6424-77-7 HCA
 CN Anthra[2,1,9-def:6,5,10-d'ef']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



RN 67075-37-0 HCA
 CN Anthra[2,1,9-def:6,5,10-d'ef']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis(2-phenylethyl)- (9CI) (CA INDEX NAME)



RN 83524-75-8 HCA
 CN Anthra[2,1,9-def:6,5,10-d'ef']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis[(4-methoxyphenyl)methyl]- (9CI) (CA INDEX NAME)



IC C09B069-02; C09B067-22
 CC 42-6 (Coatings, Inks, and Related Products)
 IT **81-33-4**, C.I. Pigment Violet 29 81-77-6, C.I. Pigment Blue 60
128-69-8, C.I. Pigment Red 224 128-70-1, C.I. Pigment Orange 40
 130-20-1, C.I. Pigment Blue 64 147-14-8, C.I. Pigment Blue 15
 475-71-8, C.I. Pigment Yellow 24 574-93-6, C.I. Pigment Blue 16
 980-26-7, C.I. Pigment Red 122 1047-16-1, C.I. Pigment Violet 19
 1324-55-6, C.I. Pigment Violet 31 1328-53-6, C.I. Pigment Green 7
 2379-74-0, C.I. Pigment Red 181 **3049-71-6**, C.I. Pigment Red 178
 3089-17-6, C.I. Pigment Red 202 3573-01-1, C.I. Pigment Red 209
 4028-94-8, C.I. Pigment Yellow 123 4051-63-2, C.I. Pigment Red 177
 4118-16-5, C.I. Pigment Yellow 147 4216-01-7, C.I. Pigment Yellow 108
 4216-02-8, C.I. Pigment Red 194 4378-61-4, C.I. Pigment Red 168
 4424-06-0, C.I. Pigment Orange 43 **4948-15-6**, C.I. Pigment Red
 149 5045-40-9, C.I. Pigment Yellow 109 **5521-31-3**, C.I. Pigment
 Red 179 5590-18-1, C.I. Pigment Yellow 110 6409-74-1, C.I. Pigment Red
 89 **6424-77-7**, C.I. Pigment Red 190 14295-43-3, C.I. Pigment
 Red 88 14302-13-7, C.I. Pigment Green 36 17741-63-8, C.I. Pigment
 Violet 37 25737-27-3 28471-14-9 28880-55-9, Ethoquad O12
 28901-96-4 29719-96-8 40716-47-0, C.I. Pigment Orange 61 51016-63-8,
 C.I. Pigment Yellow 173 54660-00-3, C.I. Pigment Red 255 61512-61-6,
 C.I. Pigment Orange 51 61968-81-8, C.I. Pigment Red 192
67075-37-0, C.I. Pigment **Black** 31 69166-06-9
 70321-14-1, C.I. Pigment Yellow 193 71819-74-4, C.I. Pigment Orange 48
 71819-75-5, C.I. Pigment Orange 49 71819-76-6, C.I. Pigment Red 206
 71819-77-7, C.I. Pigment Red 207 71819-79-9, C.I. Pigment Violet 42
 72828-01-4, C.I. Pigment Red 226 **83524-75-8**, C.I. Pigment
Black 32 84632-50-8, C.I. Pigment Orange 71 84632-59-7, C.I.
 Pigment Orange 73 84632-65-5, C.I. Pigment Red 254 88949-33-1, C.I.
 Pigment Red 264 93050-92-1D, Indanthrone blue, disulfonated
 114482-12-1D, sulfonated 120772-59-0 136897-58-0, C.I. Pigment Yellow
 199 211502-19-1, C.I. Pigment Red 262 215247-95-3, C.I. Pigment Violet
 23 251086-13-2, C.I. Pigment Red 270 350249-32-0, C.I. Pigment Red 272
 438037-75-3 438231-79-9, C.I. Pigment Red 204 438232-27-0, C.I. Vat
 Red 74
 RL: TEM (Technical or engineered material use); USES (Uses)
 (dispersants and rheol. improvers for pigment compns. having improved
 rheol.)

L54 ANSWER 8 OF 15 HCA COPYRIGHT 2004 ACS on STN

136:387535 Weather-resistant radiation-curable ink-jet ink

compositions with low viscosity for outdoor applications. Lee,
 Jennifer L.; Thery, Ronald K.; Ylitalo, Caroline M.; Severance, Richard
 L.; Wu, Dong; Nerad, Bruce A.; Lemire, Verna J.; Carlson, James G.; Hunt,

William J. (3M Innovative Properties Company, USA). PCT Int. Appl. WO 2002038688 A2 20020516, 53 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2001-US46508 20011107. PRIORITY: US 2000-711336 20001109.

AB Title composition comprises (a) an oligo/resin component, (b) a radiation curable, reactive diluent comprising (i) 0.1-50 wt% of an adhesion promoting, radiation curable component containing ≥ 1 heterocyclic, radiation curable monomer and/or an alkoxyated monomer with pendant alkoxyated functionality and no main chain alkoxyated functionality and (ii) ≤ 10 wt% of an optional alkoxyated, radiation curable monomer containing main-chain alkoxyated functionality. The comps., yielding durable, weatherable, abrasion resistant, printed images, are very suitable for outdoor printing applications, especially for printing outdoor graphics onto a variety of surfaces, including vinyl or other polymer films commonly used for signage, retroreflective signage or other retroreflective items.

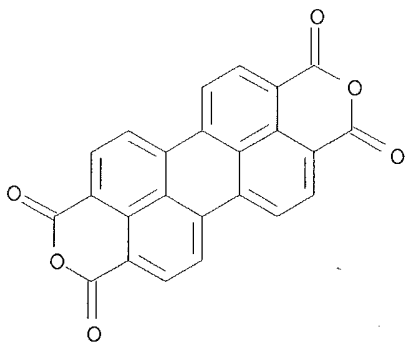
IT **128-69-8**, C.I. Pigment Red 224 **5521-31-3**, C.I. Pigment Red 179

RL: MOA (Modifier or additive use); USES (Uses)

(pigment; manufacture of weather-resistant radiation-curable ink-jet ink comps. for outdoor applications)

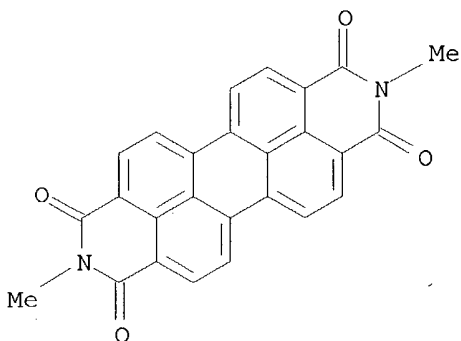
RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)

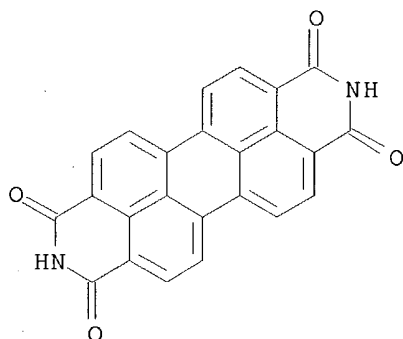


RN 5521-31-3 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-dimethyl- (9CI) (CA INDEX NAME)



- IC ICM C09D011-10
 CC 42-12 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 74
 IT Carbon **black**, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (Lamp **Black** LB 101 Pigment I; manufacture of weather-resistant radiation-curable ink-jet ink compns. for outdoor applications)
- IT **128-69-8**, C.I. Pigment Red 224 3089-17-6, RT 343D
5521-31-3, C.I. Pigment Red 179 25157-64-6, Fanchon Fast Yellow Y 5688
 RL: MOA (Modifier or additive use); USES (Uses)
 (pigment; manufacture of weather-resistant radiation-curable ink-jet ink compns. for outdoor applications)
- I54 ANSWER 9 OF 15 HCA COPYRIGHT 2004 ACS on STN
 124:90484 Manufacture of thermostable perylene diimide/silsesquioxane **composite** coatings. Linde, Harold G.; Previti-Kelly, Rosemary A.; Reen, Thomas J. (International Business Machines Corp., USA). U.S. US 5451655 A 19950919, 16 pp. (English). CODEN: USXXAM. APPLICATION: US 1994-250224 19940527.
- AB Title spin-applicable coatings, having a **thermal** stability over 500° and useful for semiconductor devices, are prepared by mixing perylene dianhydride with aminosilanes at a molar ratio of 1:4 in inert solvents. Spin coating a methylpyrrolidone solution containing perylene dianhydride and A 1100 (aminopropyltriethoxysilane) on a Si wafer, heating at 105-150° for 10 min, uring at 500° for 30 min gave a film showing a 20:80 CF4/O mixture etching rate of 5000 Å/min and pure O etching rate of 33 Å/min.
- IT **81-33-4P**
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (**thermally** stable perylene diimide/silsesquioxane composite coatings for semiconductor devices)
- RN 81-33-4 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone (9CI) (CA INDEX NAME)



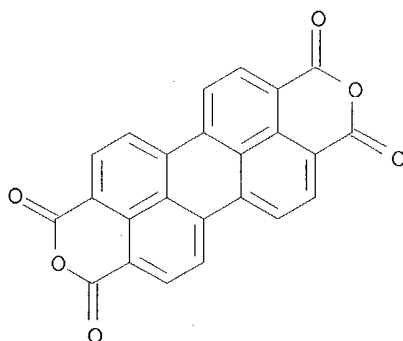
IT 128-69-8

RL: RCT (Reactant); RACT (Reactant or reagent)

(thermally stable perylene diimide/silsesquioxane composite coatings for semiconductor devices)

RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



IC ICM C08G077-26

NCL 528026000

CC 42-10 (Coatings, Inks, and Related Products)

Section cross-reference(s): 76

ST thermally stability perylene diimide silsesquioxane coating;
aminosilane reaction perylene dianhydride masking coating

IT Semiconductor devices

(masking films; thermally stable perylene diimide/silsesquioxane composite coatings for semiconductor devices)

IT Silsesquioxanes

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM
(Technical or engineered material use); PREP (Preparation); USES (Uses)
(thermally stable perylene diimide/silsesquioxane composite coatings for semiconductor devices)

IT Coating materials

(heat-resistant, thermally stable perylene diimide/silsesquioxane composite coatings for semiconductor devices)

IT 81-33-4P

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM
(Technical or engineered material use); PREP (Preparation); USES (Uses)
(thermally stable perylene diimide/silsesquioxane composite coatings for semiconductor devices)

IT 29159-37-3P 172807-15-7P, A 0698 Homopolymer

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(**thermally** stable perylene diimide/silsesquioxane composite coatings for semiconductor devices)

IT **128-69-8**

RL: RCT (Reactant); RACT (Reactant or reagent)

(**thermally** stable perylene diimide/silsesquioxane composite coatings for semiconductor devices)

L54 ANSWER 10 OF 15 HCA COPYRIGHT 2004 ACS on STN

116:66453 Process for treating wastes from wastewaters obtained from the production of dyes. Von Plessen, Helmold; Reichert, Karl Michael; Metz, Erich (Hoechst A.-G., Germany). Eur. Pat. Appl. EP 452863 A2 19911023, 7 pp. DESIGNATED STATES: R: CH, DE, FR, GB, IT, LI. (German). CODEN: EPXXDW. APPLICATION: EP 1991-106011 19910416. PRIORITY: DE 1990-4012422 19900419.

AB Wastes from the 2-stage manufacture of perylene tetracarboxylic acid anhydride, where perylimide is made in the first stage and saponified to perylene tetracarboxylic acid anhydride in the second, are treated by reacting the KOH-containing effluents from the first stage with the waste H₂SO₄ from the second stage to form K₂SO₄. The method produces a salable K₂SO₄, an organic residue which can be **incinerated**, and a wastewater which can be biol. treated.

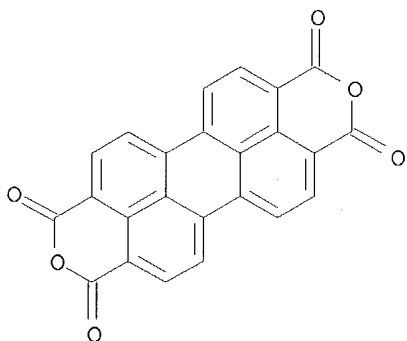
IT **128-69-8P**

RL: IMF (Industrial manufacture); PREP (Preparation)

(waste from manufacture of, potassium sulfate recovery from)

RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



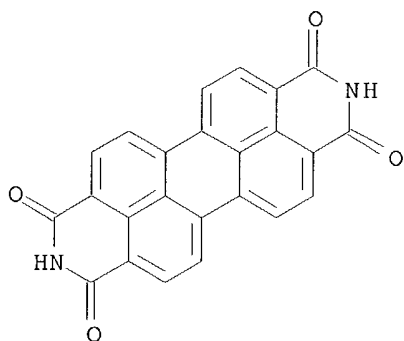
IT **81-33-4P**

RL: IMF (Industrial manufacture); PREP (Preparation)

(wastes from manufacture of, in perylene tetracarboxylic acid anhydride manufacture, potassium sulfate recovery from)

RN 81-33-4 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone (9CI) (CA INDEX NAME)



IC ICM C01D005-00

CC 60-2 (Waste Treatment and Disposal)

Section cross-reference(s): 41, 49

IT **128-69-8P**

RL: IMF (Industrial manufacture); PREP (Preparation)
(waste from manufacture of, potassium sulfate recovery from)

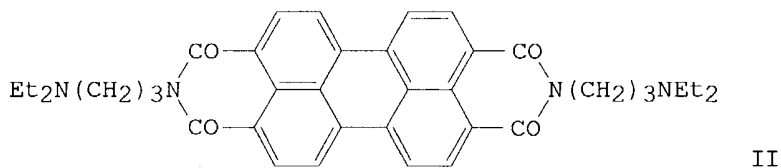
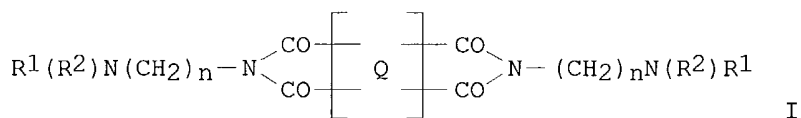
IT **81-33-4P**

RL: IMF (Industrial manufacture); PREP (Preparation)
(wastes from manufacture of, in perylene tetracarboxylic acid anhydride
manufacture, potassium sulfate recovery from)

L54 ANSWER 11 OF 15 HCA COPYRIGHT 2004 ACS on STN

111:116824 Easily dispersible pigment **compositions** and dispersing
method. Miki, Toshiyuki; Takeya, Mitsumasa (Sanyo Color Works, Ltd.,
Japan). Eur. Pat. Appl. EP 302973 A1 19890215, 12 pp. DESIGNATED STATES:
R: CH, DE, FR, GB, LI. (English). CODEN: EPXXDW. APPLICATION: EP
1987-307118 19870812.

GI



AB The title pigment compns., which have excellent flow and nonagglomeration
properties, comprise 100 parts of an organic or inorg. pigment and 0.5-15
parts of a diimide compound I (Q = naphthalene or perylene radical, both
substituted at the four peri positions; R₁, R₂ = H, Me, Et; n = 2, 3).
3,4,9,10-Perylenetetracarboxylic dianhydride was condensed with
3-(diethylamino)propylamine producing II. A pigment composition was prepared
by grinding C. I. Pigment Red 179 100, anhydrous Na₂SO₄ 500, and diethylene
glycol 120 parts at 60-65° for 6 h, adding 6 parts II, grinding,
washing with 3500 parts H₂O at 70° for 2 h, filtering, and drying.

This pigment composition (5 parts) was mixed with Acrylic 47-712 (acrylic resin) 15, thinner 25, and steel beads 300 parts for 60 min, and this dispersion was mixed with 13.1 parts of Acrylic 47-712 and 10 parts of Super Beckamine L-117-6, producing a paint which had viscosity (6 rpm) 186 cP-s, (60 rpm) 188 cP-s, and gloss 84.7%, vs. 2450, 744, and 75.7, resp., for a control paint prepared without II.

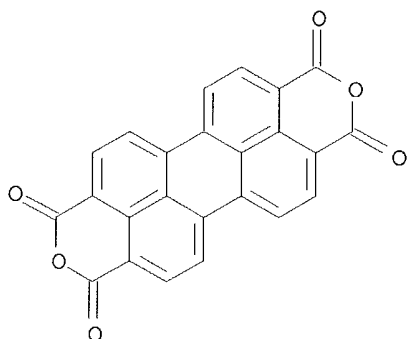
IT **128-69-8**, C.I. Pigment Red 224 **5521-31-3**, C.I. Pigment Red 179

RL: USES (Uses)

(pigment compns. containing, readily dispersible)

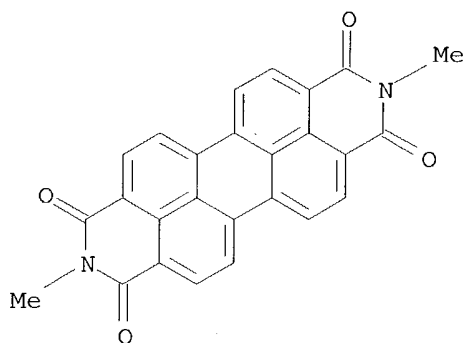
RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



RN 5521-31-3 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-dimethyl- (9CI) (CA INDEX NAME)



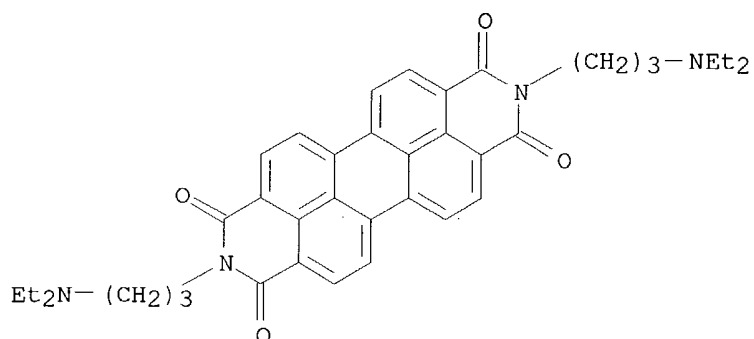
IT **85224-18-6 113447-62-4 117901-97-0**

RL: USES (Uses)

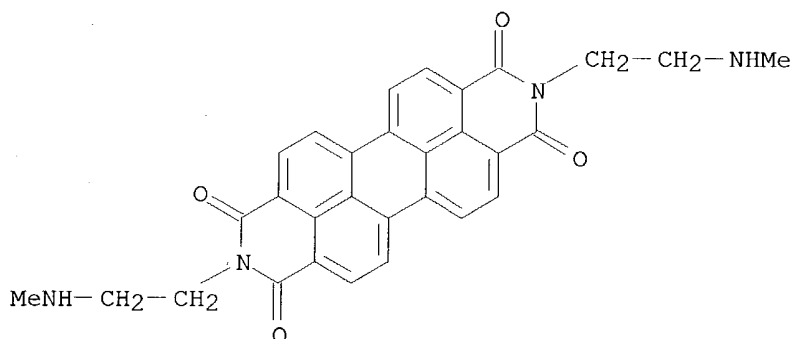
(pigments, manufacture of compns. containing, readily dispersible)

RN 85224-18-6 HCA

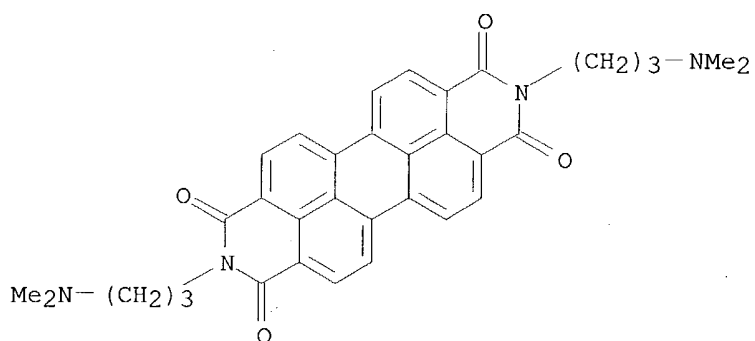
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis[3-(diethylamino)propyl]- (9CI) (CA INDEX NAME)



RN 113447-62-4 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis[2-(methylamino)ethyl]- (9CI) (CA INDEX NAME)

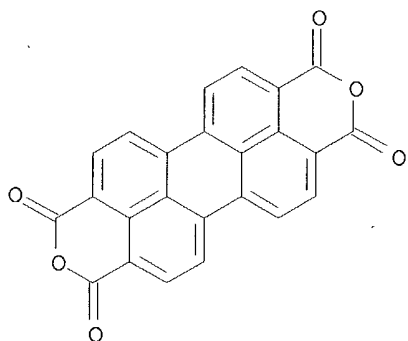


RN 117901-97-0 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis[3-(dimethylamino)propyl]- (9CI) (CA INDEX NAME)

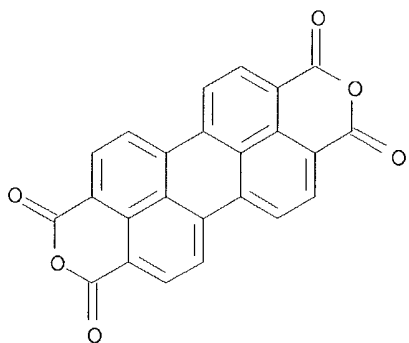


IT **128-69-8**, 3,4,9,10-Perylenetetracarboxylic dianhydride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with (dialkylamino)alkylamines)

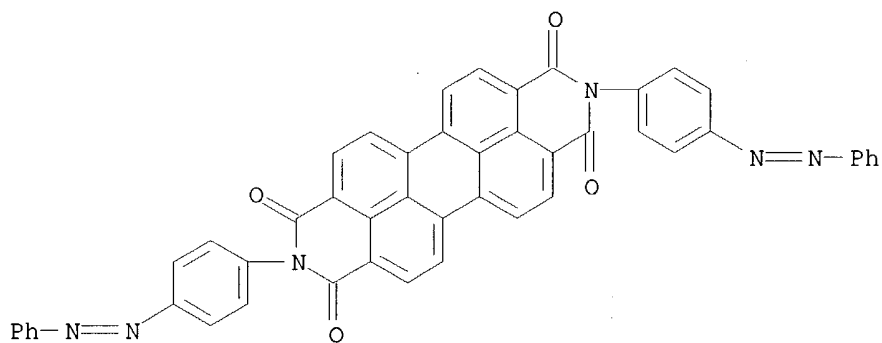
RN 128-69-8 HCA
 CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



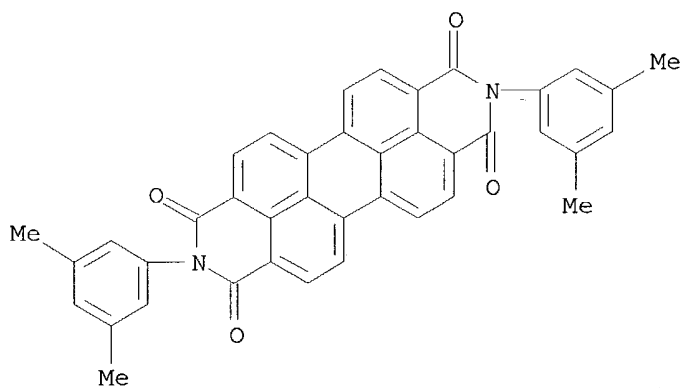
- IC ICM C09B067-22
ICS C09B067-20; C09B005-62; C09B057-08
- CC 41-5 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 28, 42
- IT Carbon **black**, uses and miscellaneous
RL: USES (Uses)
(pigment compns. containing, with naphthalene- and perylenetetracarboxylic diimides, readily dispersible)
- IT **128-69-8**, C.I. Pigment Red 224 1047-16-1, C.I. Pigment Violet 19 1344-28-1, Alumina, uses and miscellaneous 4424-06-0, C.I. Pigment Orange 43 **5521-31-3**, C.I. Pigment Red 179 9003-08-1, Super-Beckamine L 117-60 83270-68-2, Acrylic 47-712
RL: USES (Uses)
(pigment compns. containing, readily dispersible)
- IT 3436-54-2 3436-55-3 **85224-18-6 113447-62-4 117901-97-0**
RL: USES (Uses)
(pigments, manufacture of compns. containing, readily dispersible)
- IT **128-69-8**, 3,4,9,10-Perylenetetracarboxylic dianhydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (dialkylamino)alkylamines)
- L54 ANSWER 12 OF 15 HCA COPYRIGHT 2004 ACS on STN
- 108:13858 **Single**-component red developer **compositions**.
Grushkin, Bernard (Xerox Corp. , USA). U.S. US 4681829 A 19870721, 6 pp. (English). CODEN: USXXAM. APPLICATION: US 1986-902720 19860902.
- AB A pos. charged electrostatog. toner composition comprising a resin and a pigment from the groups perylene and monoazo dyes contains a charge-enhancing additive to reduce the background deposition. Further, colloidal silica and low mol. weight waxes can be added as additives. Thus, a toner was prepared by **melt**-blending butadiene-styrene resin, Pigment Red 178, and distearyldimethylammonium Me sulfate. Also, Aerosil R972 was added. The toner produced red images with acceptable resolution and no background deposits. The final toner charge was 17.1 $\mu\text{C/g}$ as compared to -3.8 $\mu\text{C/g}$ for a toner without the additives.
- IT **128-69-8 3049-71-6 4948-15-6**, Pigment Red 149
5521-31-3 6424-77-7, Pigment Red 190 **24108-89-2**
RL: TEM (Technical or engineered material use); USES (Uses)
(electrostatog. toner containing, charge-enhancing additive for)
- RN 128-69-8 HCA
- CN Perylo[3,4-cd:9,10-c'd']dipyrans-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



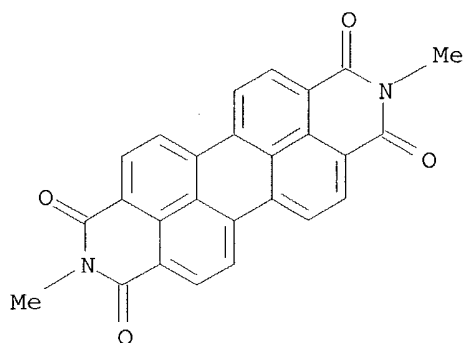
RN 3049-71-6 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis[4-(phenylazo)phenyl]- (9CI) (CA INDEX NAME)



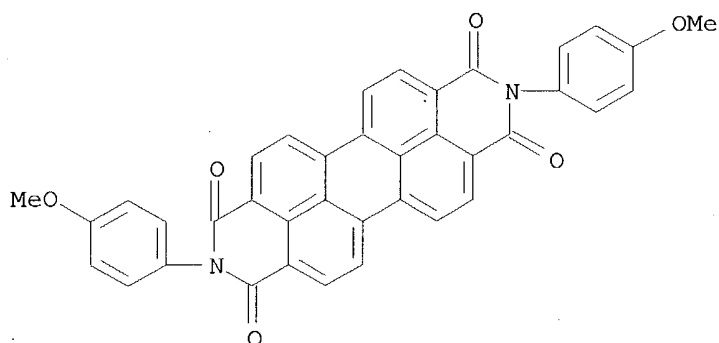
RN 4948-15-6 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis(3,5-dimethylphenyl)- (9CI) (CA INDEX NAME)



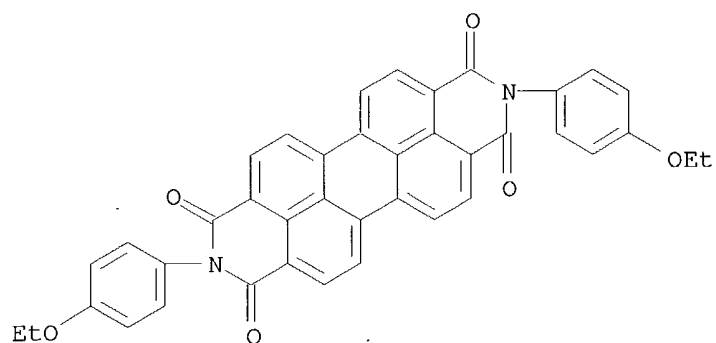
RN 5521-31-3 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-dimethyl- (9CI) (CA INDEX NAME)



RN 6424-77-7 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



RN 24108-89-2 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis(4-ethoxyphenyl)- (9CI) (CA INDEX NAME)



IC ICM G03G009-08
 NCL 430109000
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 IT **128-69-8** 2786-76-7 2814-77-9 **3049-71-6**
4948-15-6, Pigment Red 149 **5521-31-3** **6424-77-7**
 , Pigment Red 190 6448-95-9 6535-46-2 6655-84-1, Pigment Red 17
 7023-61-2 **24108-89-2** 28632-05-5 111883-31-9

RL: TEM (Technical or engineered material use); USES (Uses)
(electrostatog. toner containing, charge-enhancing additive for)

L54 ANSWER 13 OF 15 HCA COPYRIGHT 2004 ACS on STN

105:62108 Carbon fiber manufacture. Murakami, Mutsuaki; Yoshimura, Susumu
(Research Development Corp. of Japan, Japan). Jpn. Kokai Tokkyo Koho JP
61055220 A2 19860319 Showa, 8 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1984-175163 19840824.

AB Carbon fibers for reinforcing of plastics and metals are prepared by
vapor-phase growth, by forming a molding from an aromatic acid, dianhydride,
an aromatic diimide, or an aromatic tetrathia compound and then partially or
completely decomposing the compound by heat. Thus, a
naphthalenetetracarboxylic acid dianhydride was pressed to give a 1-mm
film. The film was then heated from 200° to 1000° at
10°/min and held 1 h to give carbon fibers with diameter 0.5-3 µm
and length 0.1-2 mm.

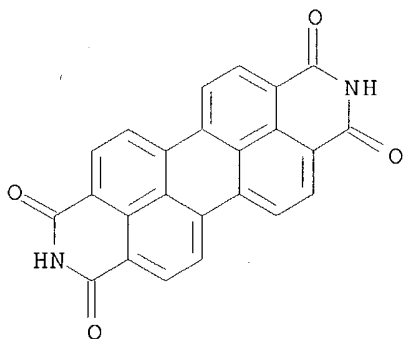
IT 81-33-4 128-69-8 5521-31-3 6424-77-7
24108-89-2

RL: USES (Uses)

(carbon fiber manufacture from, by vapor-phase growth)

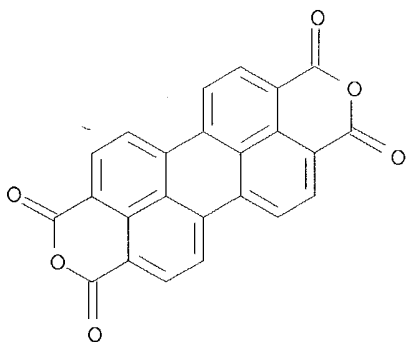
RN 81-33-4 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone
(9CI) (CA INDEX NAME)



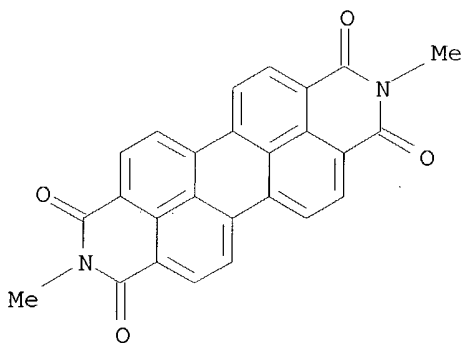
RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)

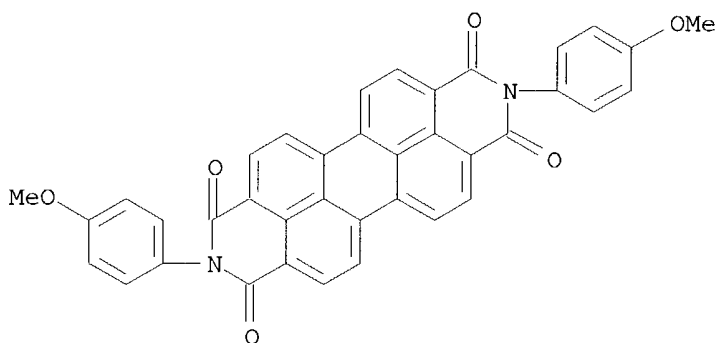


RN 5521-31-3 HCA

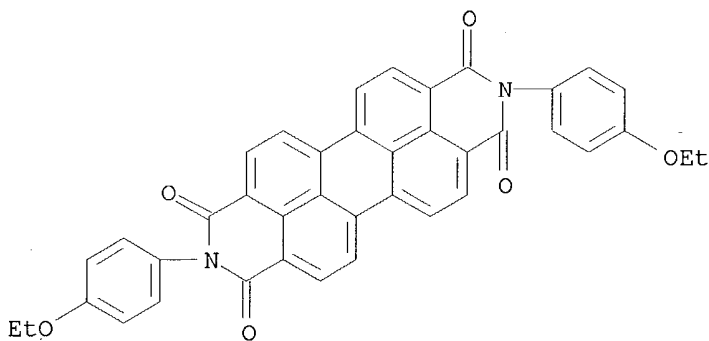
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-dimethyl- (9CI) (CA INDEX NAME)



RN 6424-77-7 HCA
 CN Anthra[2,1,9-def:6,5,10-d'ef']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



RN 24108-89-2 HCA
 CN Anthra[2,1,9-def:6,5,10-d'ef']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis(4-ethoxyphenyl)- (9CI) (CA INDEX NAME)



IC ICM D01F009-12

CC 40-2 (Textiles)

Section cross-reference(s): 37, 55, 56

ST carbon fiber vapor phase growth; naphthalenetetracarboxylic acid dianhydride carbon fiber; perylenetetracarboxylic acid dianhydride carbon fiber; biphenyltetracarboxylic acid dianhydride carbon fiber; benzophenonetetracarboxylic acid dianhydride carbon fiber; pyromellitimide carbon fiber; naphthalenediimide carbon fiber; tetrathianaphthalene carbon fiber; tetrathiatetracene carbon fiber; tetrathiaperylene carbon fiber;

carbonization naphthalenetetracarboxylic acid dianhydride; plastic reinforcement carbon fiber; metal reinforcement carbon fiber

IT **Carbonization** and Coking

(of aromatic acid dianhydrides, aromatic diimides or aromatic tetrathia compds.,

for carbon fibers manufacture)

IT 81-30-1 **81-33-4 128-69-8** 193-44-2 1779-17-5

2420-87-3 2421-28-5 2550-73-4 3711-01-1 3711-03-3 3711-04-4

4430-56-2 **5521-31-3** 5690-24-4 **6424-77-7**

24108-89-2 35753-06-1 79569-73-6 101395-58-8 101395-59-9

103551-73-1 103551-74-2 103551-75-3 103551-76-4 103551-77-5

RL: USES (Uses)

(carbon fiber manufacture from, by vapor-phase growth)

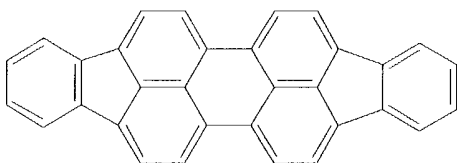
L54 ANSWER 14 OF 15 HCA COPYRIGHT 2004 ACS on STN

98:225354 Red perylene dichroic dye-containing liquid crystal

formulations. Aftergut, Siegfried; Cole, Herbert S., Jr. (General Electric Co., USA). U.S. US 4378302 A 19830329, 6 pp. (English).

CODEN: USXXAM. APPLICATION: US 1980-217267 19801216.

GI



I

AB Liquid crystal composition for optical display device contains guest perylene-based dichroic dye having sym.-disposed substituents which are groups forming with the 3,4- and 9,10-C, resp., a 5 or 6 membered cyclic ring which is substituted by or **fused** to a Ph ring. Thus, a mixture of Licristal 1291 containing I 0.1 and

4,4'-bis[3-methyl-5-methoxy-4-(4-pentoxycarbonyl)phenylazo]azobenzene 0.8 weight% was placed in a test cell (distance of 18 μ between the glass plates). In a quiescent state the liquid crystal mixture was orange-red and when elec. switched to the activated state the mixture was clear.

IT **27820-67-3P 32283-93-5P 80280-18-8P**

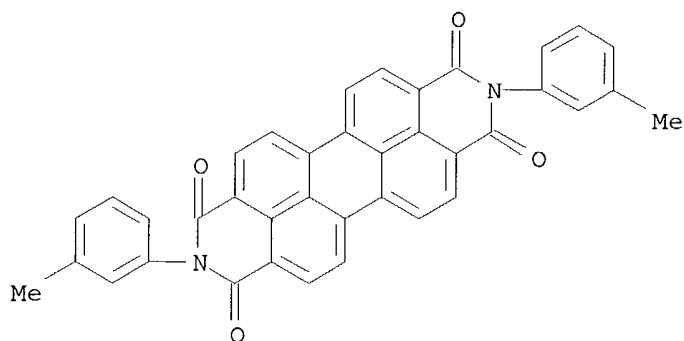
85872-83-9P

RL: PREP (Preparation)

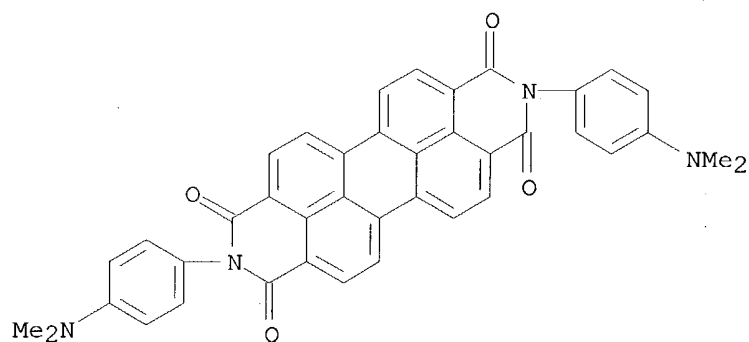
(preparation of, for liquid-crystal optical display)

RN 27820-67-3 HCA

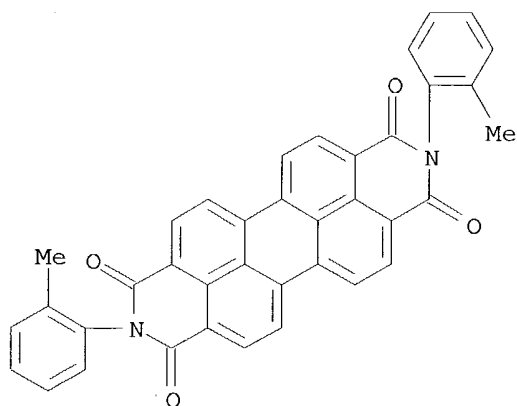
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



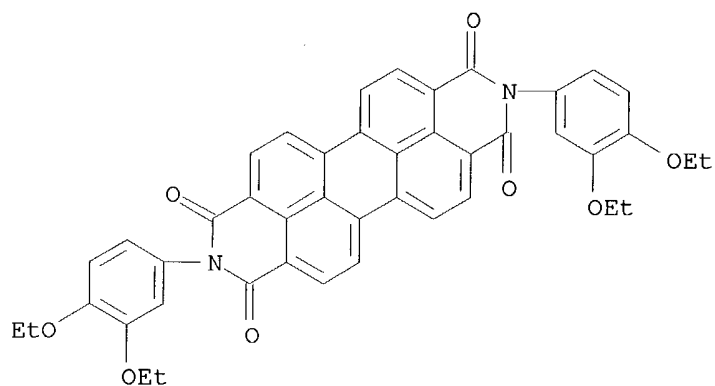
RN 32283-93-5 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis[4-(dimethylamino)phenyl]- (9CI) (CA INDEX NAME)



RN 80280-18-8 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis(2-methylphenyl)- (9CI) (CA INDEX NAME)



RN 85872-83-9 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis(3,4-diethoxyphenyl)- (9CI) (CA INDEX NAME)



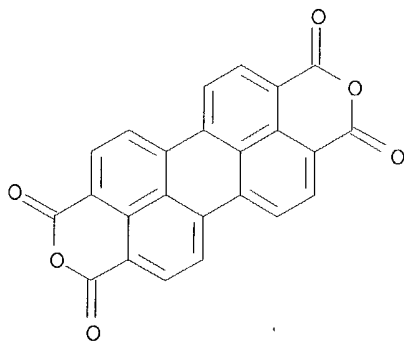
IT 128-69-8

RL: USES (Uses)

(reaction with aniline derivs., in preparation of red dichroic dyes for liquid-crystal displays)

RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



IC C09K003-34; G02F001-13

NCL 252299100

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 27820-67-3P 32283-93-5P 80280-18-8P

85872-83-9P

RL: PREP (Preparation)

(preparation of, for liquid-crystal optical display)

IT 128-69-8

RL: USES (Uses)

(reaction with aniline derivs., in preparation of red dichroic dyes for liquid-crystal displays)

L54 ANSWER 15 OF 15 HCA COPYRIGHT 2004 ACS on STN

42:27502 Original Reference No. 42:5892i,5893a-g Preparation of perylenetetracarboxylic acid. Porai-Koshits, A. E.; Pavlushenko, I. S. (Leningrad Technol. Inst.). Zhurnal Obshchei Khimii, 17, 1739-51 (Russian) 1947. CODEN: ZOKHA4. ISSN: 0044-460X.

AB Preparation of perylenetetracarboxylic acid (I) in 67% yield from naphthalic acid was developed. Corrections of earlier data on I derivs. are made. Alkaline **fusion** of naphthalic anhydride does not give perylene

derivs. Naphthalic acid, m. 272°, was prepared according to Graebe and Gfeller (Ber. 25, 653(1895)), but it was found necessary to use 15 parts AcOH and 8 parts K₂Cr₂O₇ and boil the mixture 3.5 hrs. The acid was converted to the naphthalic anhydride by heating 1-1.5 hrs. to 160°. Heating 54 g. of the acid with 29.5 ml. 18% NH₄OH and 50 ml. H₂O in an **autoclave** 1-2 hrs. at 130-190° gave 48-51 g. naphthalimide, m. 285-298°. A **melt** of 10 g. NaOH and 1.5 ml. H₂O at 150-70°, treated with 2 g. imide and heated 15 min. at 260-315°, gave 75-81% perylenetetracarboxylic diimide on pouring into H₂O, dilution by H₂O to 20% alkali concentration, and oxidation by

bubbling

with air 6 hrs.; no significant difference was found when KOH or KOH-NaOH was used in the **fusion**; **fusion** beyond 17 min. gave lower yields. Acidification of the alkaline oxidized solution gave the diimide of essentially 100% purity, checked by spectrum analysis. The product forms red-violet crystals with bronze luster, having absorption maximum at 550 and 590 mμ (in 94% H₂SO₄). When 30 g. naphthalimide, 120 g. KOH, and 90 ml. H₂O were heated in an **autoclave** 1 hr. at 210° the mixture did not contain any perylenecarboxylate derivs., while C₁₀H₈ and NH₃ were detected; the products were not studied. **Fusion** of 20 g. KOH with 5 g. naphthalic anhydride 5-10 min. at 170-260° gave either naphthalic acid, naphthoic acid, or tar, and no perylene derivs. were isolated. The mother liquor, after separation of the diimide, on acidification by mineral acid gives a small amount of a solid, purified by sublimation, yellow needles, m. 431.5°, which is either 2- or 4-hydroxynaphthalimide. The diimide was not hydrolyzed by heating with concentrated HCl even at 220°; use of H₂SO₄ led to successful hydrolysis. The best results were obtained when the diimide and 6-8 parts 90-100% H₂SO₄ were heated 1-1.5 hrs. to 215-25°; the mass, cooled to 100°, was diluted with H₂O until 10-15% acid concentration was reached, filtered hot, and the resulting perylenetetracarboxylic dianhydride was washed with hot water, dissolved in hot dilute carbonate solution, filtered, and the filtrate acidified hot with 40% H₂SO₄ to Congo red, giving the purified dianhydride as a red-brown solid; conversely, the alkaline filtrate can be salted out by NaCl and the separated paste on treatment with dilute HCl gives a suspension of the dianhydride which can be filtered quite readily (the product is rather bulky and the necessary washing is quite lengthy). The yield of the pure product is 67% based on naphthalic acid; the pure dianhydride in powdered state is red and has absorption maximum at 505 and 545 mμ (in 94% H₂SO₄). If the pasty crude dianhydride is washed with cold NaHCO₃ and the filtrate acidified, there is obtained a small amount of **black** powder, very difficultly soluble in H₂O, soluble in alkali, which appears to be a sulfonic acid of perylenetetracarboxylic acid.

Perlynenetetracarboxylic diimide (3 g.) was heated 1 hr. with 25 ml.

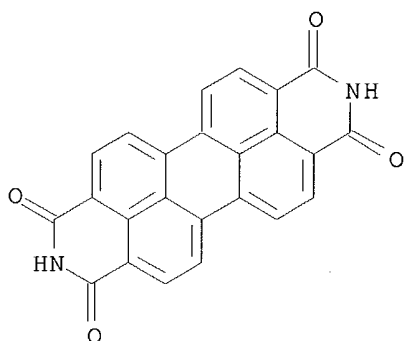
concentrated

H₂SO₄ to 180°, cooled, poured into water, and the resulting solid washed with water, treated with 300 ml. hot 2% KOH, filtered hot, and cooled, giving, on salting out, the K salt of perylenetetracarboxylic monoimide (25-30%); after recrystn. the salt was converted by dilute HCl to the free monoimide, a red-brown powder, absorption maximum 540-80 mμ (in 94% H₂SO₄).

IT **81-33-4**, 3,4,9,10-Perlynenetetracarboxylic diimide **128-69-8**
 , 3,4,9,10-Perlynenetetracarboxylic dianhydride
 (preparation of)

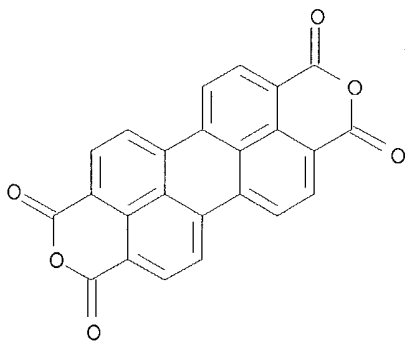
RN 81-33-4 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone
 (9CI) (CA INDEX NAME)



RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)

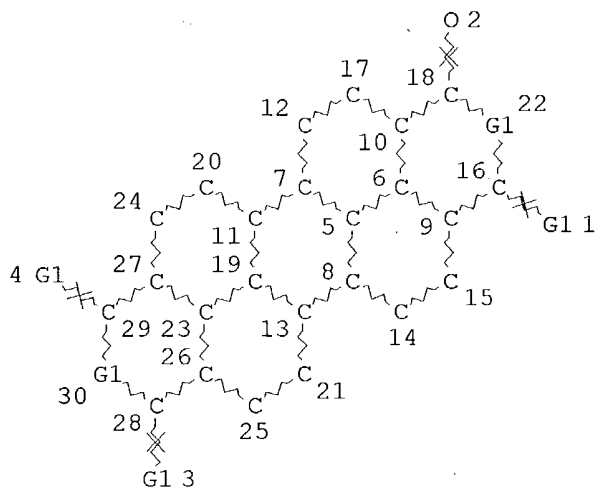


CC 10 (Organic Chemistry)

IT **81-33-4**, 3,4,9,10-Perylenetetracarboxylic diimide 81-83-4,
Naphthalimide 81-84-5, Naphthalic anhydride **128-69-8**,
3,4,9,10-Perylenetetracarboxylic dianhydride 518-05-8, Naphthalic acid
(preparation of)

=> d que stat 157

L5 STR



VAR G1=N/O

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

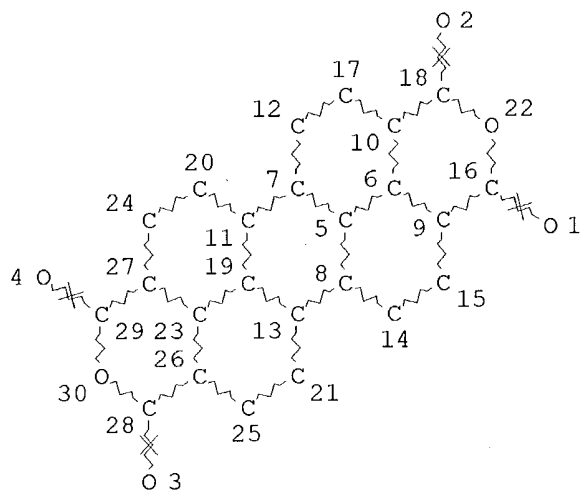
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L7 3048 SEA FILE=REGISTRY SSS FUL L5

L8 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

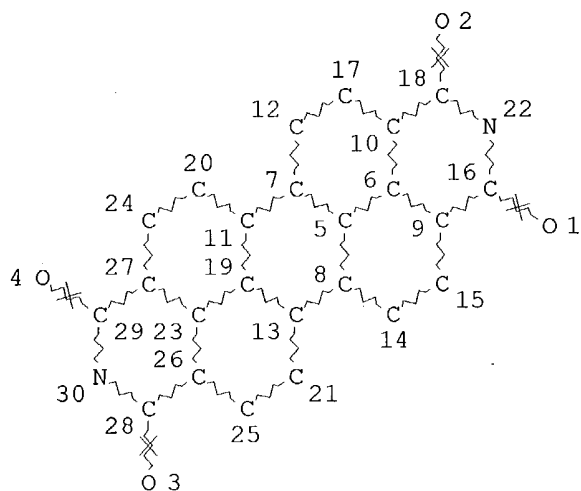
GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L9 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

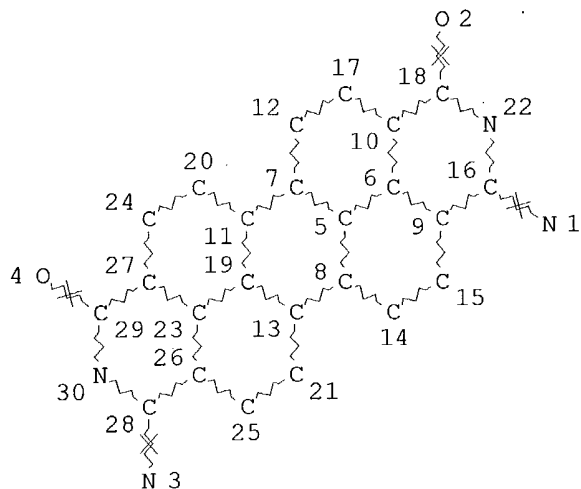
GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L10 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

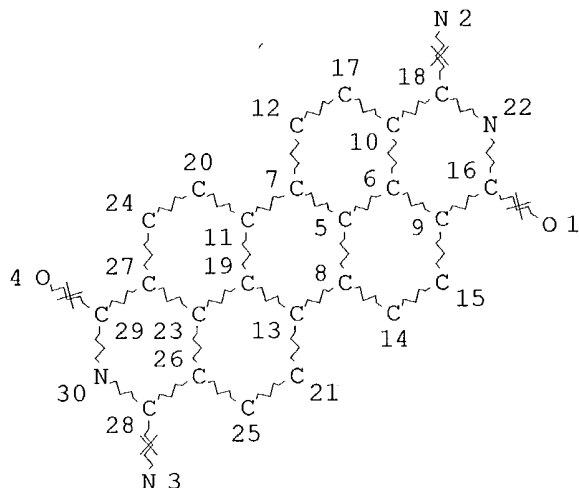
GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L11 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L13 127 SEA FILE=REGISTRY SUB=L7 SSS FUL L8
 L15 2408 SEA FILE=REGISTRY SUB=L7 SSS FUL L9
 L17 142 SEA FILE=REGISTRY SUB=L7 SSS FUL L10
 L19 149 SEA FILE=REGISTRY SUB=L7 SSS FUL L11
 L28 1033 SEA FILE=HCA ABB=ON PLU=ON L13
 L29 2735 SEA FILE=HCA ABB=ON PLU=ON L15
 L30 225 SEA FILE=HCA ABB=ON PLU=ON L17
 L31 343 SEA FILE=HCA ABB=ON PLU=ON L19
 L32 394 SEA FILE=HCA ABB=ON PLU=ON L28 AND L29
 L33 43 SEA FILE=HCA ABB=ON PLU=ON L28 AND L30
 L34 50 SEA FILE=HCA ABB=ON PLU=ON L28 AND L31
 L35 65 SEA FILE=HCA ABB=ON PLU=ON L29 AND L30
 L36 100 SEA FILE=HCA ABB=ON PLU=ON L29 AND L31
 L37 190 SEA FILE=HCA ABB=ON PLU=ON L30 AND L31
 L38 649 SEA FILE=HCA ABB=ON PLU=ON (L32 OR L33 OR L34 OR L35 OR L36
 OR L37)
 L39 33 SEA FILE=HCA ABB=ON PLU=ON L38 AND BLACK
 L40 2126184 SEA FILE=HCA ABB=ON PLU=ON CALEFACT? OR TORREFACT? OR PYROL?
 OR SINTER? OR CALCIN? OR AUTOCLAV? OR THERMOL? OR THERMAL? OR
 TEPEFACT? OR MELT? OR FUSE# OR FUSING# OR FUSION?
 L41 65 SEA FILE=HCA ABB=ON PLU=ON L38 AND L40
 L42 1 SEA FILE=HCA ABB=ON PLU=ON L39 AND L41
 L43 1608840 SEA FILE=HCA ABB=ON PLU=ON BURN? OR CHARR? OR COMBUST? OR
 IGNIT? OR CARBONIZ? OR SCORCH? OR SING? OR INCINERAT?
 L44 43 SEA FILE=HCA ABB=ON PLU=ON L38 AND L43
 L45 2 SEA FILE=HCA ABB=ON PLU=ON L44 AND BLACK
 L46 35 SEA FILE=HCA ABB=ON PLU=ON L38 AND (MIXT# OR MIXTURE? OR
 BLEND? OR ADMIX? OR COMMIX? OR IMMIX? OR INTERMIX? OR COMPOSIT?
 OR COMPN# OR COMPSN# OR FORMULAT? OR INTERSPER?)/TI
 L47 8 SEA FILE=HCA ABB=ON PLU=ON L46 AND L39
 L48 3 SEA FILE=HCA ABB=ON PLU=ON L46 AND L41

L49 2 SEA FILE=HCA ABB=ON PLU=ON L46 AND L44
L51 441247 SEA FILE=HCA ABB=ON PLU=ON BURN? OR CHARR? OR COMBUST? OR
IGNIT? OR CARBONIZ? OR SCORCH? OR SINGE# OR SINGING# OR
INCINERAT?
L52 4 SEA FILE=HCA ABB=ON PLU=ON L38 AND L51
L54 15 SEA FILE=HCA ABB=ON PLU=ON L42 OR L45 OR L47 OR L48 OR L49
OR L52
L57 23 SEA FILE=HCA ABB=ON PLU=ON L39 NOT L54

=> d 157 1-23 cbib abs hitstr hitind

L57 ANSWER 1 OF 23 HCA COPYRIGHT 2004 ACS on STN

141:333727 Ink sets and ink-jet inks and ink-jet recording method using them.
Iwamoto, Tsutomu; Asatake, Atsushi; Nakamura, Masaki; Sato, Naoki (Konica
Minolta Holdings, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2004285216 A2
20041014, 25 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-79240
20030324.

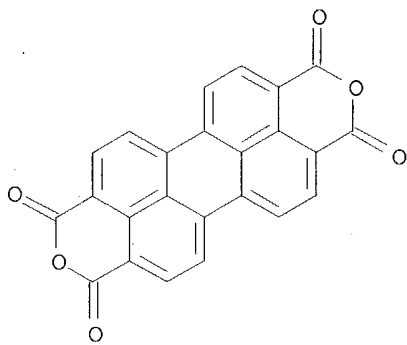
AB The ink sets contain yellow inks, magenta inks, cyan inks, **black**
inks, green inks, and red inks, wherein the inks contain water, pigments,
and photopolymerizable compound (e.g., polyester diacrylate) emulsions. The
inks are capable of producing images with high chroma, gloss, color
reproducibility, and scratch resistance.

IT **128-69-8**, C.I. Pigment Red 224 **24108-89-2**, C.I. Pigment
Red 123

RL: TEM (Technical or engineered material use); USES (Uses)
(water-thinned pigmented inks and ink sets with high chroma, color
reproducibility and scratch resistance)

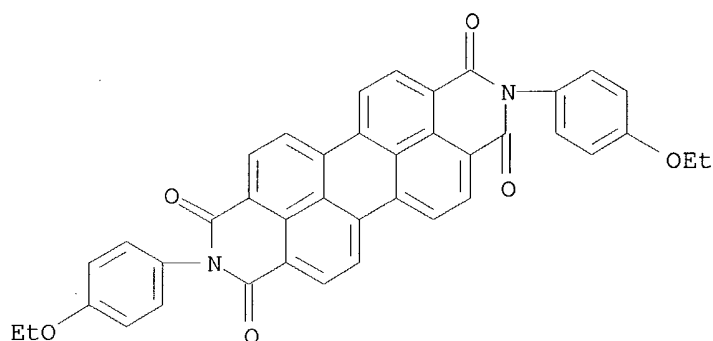
RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



RN 24108-89-2 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis(4-ethoxyphenyl)- (9CI) (CA INDEX NAME)



IC ICM C09D011-00
 ICS B41J002-01; B41M005-00
 CC 42-12 (Coatings, Inks, and Related Products)
 IT **128-69-8**, C.I. Pigment Red 224 980-26-7, C.I. Pigment Red 122
 1328-53-6, C.I. Pigment Green 7 2786-76-7, C.I. Pigment Red 170
 3573-01-1, C.I. Pigment Red 209 4051-63-2, C.I. Pigment Red 177
 4216-02-8, C.I. Pigment Red 194 14302-13-7, C.I. Pigment Green 36
24108-89-2, C.I. Pigment Red 123
 RL: TEM (Technical or engineered material use); USES (Uses)
 (water-thinned pigmented inks and ink sets with high chroma, color
 reproducibility and scratch resistance)

L57 ANSWER 2 OF 23 HCA COPYRIGHT 2004 ACS on STN

140:365788 Particle containing pigment in resin for electrophoresis display
 and electrophoresis display device using the same. Motoi, Yasuko; Ueno,
 Rie; Takagi, Shinya; Ogawa, Akiko (Canon Inc., Japan). Jpn. Kokai Tokkyo
 Koho JP 2004133353 A2 20040430, 17 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 2002-300269 20021015.

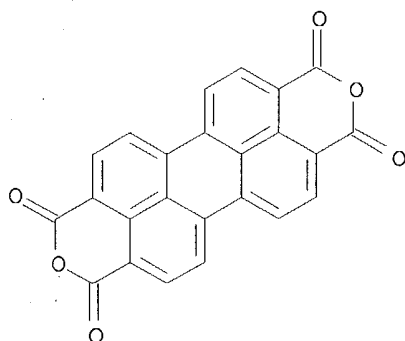
AB The particle contains a pigment in a resin and has the average grain diameter
 0.1-20 μm , wherein the grain diameter has ≥ 2 frequency maximum values.
 The particle when it is used for the electrophoresis display exhibits
 high color d. and masking power.

IT **128-69-8**, Irgazin red BPT **4948-15-6**, Permanent red BL
67075-37-0, Paliogen **black** L0084

RL: DEV (Device component use); USES (Uses)
 (particle containing pigment in resin for electrophoresis display)

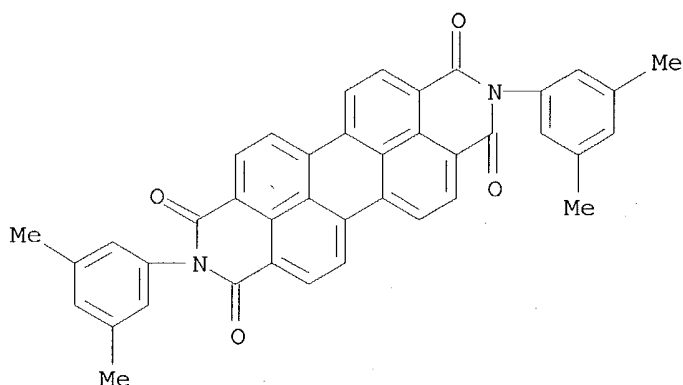
RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



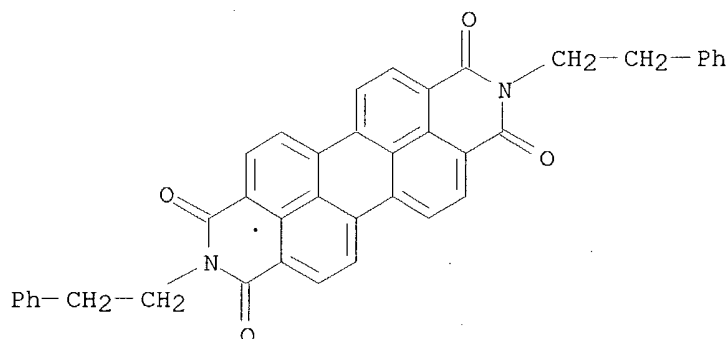
RN 4948-15-6 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis(3,5-dimethylphenyl)- (9CI) (CA INDEX NAME)



RN 67075-37-0 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis(2-phenylethyl)- (9CI) (CA INDEX NAME)



IC ICM G02F001-167

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

Section cross-reference(s): 38, 41

IT Carbon **black**, uses

RL: DEV (Device component use); USES (Uses)

(particle containing pigment in resin for electrophoresis display)

IT **128-69-8**, Irgazin red BPT 147-14-8, Phthalocyanine blue

989-38-8, Rhodamine 6G 1344-37-2, Chrome yellow **4948-15-6**,

Permanent red BL 9003-53-6, Polyvinylbenzene 13463-67-7, Titania, uses

16143-80-9, Pigment green B 57455-37-5, Ultramarine blue

67075-37-0, Paliogen **black** L0084

RL: DEV (Device component use); USES (Uses)

(particle containing pigment in resin for electrophoresis display)

L57 ANSWER 3 OF 23 HCA COPYRIGHT 2004 ACS on STN

140:207417 Organic photoreceptor, electrophotographic image formation,
apparatus, and process cartridge. Itami, Akihiko (Konica Minolta Holdings
Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2004061588 A2 20040226, 33 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-216238 20020725.

AB The organic photoreceptor comprises a conductive support successively coated
with 0.3-2 μm -thick charge-generating layer containing N-type pigment and

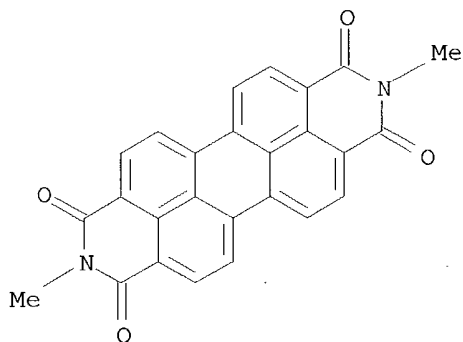
charge-transporting layer(s) with total thickness 5-15 μm containing a charge-transporting agent. The N-type pigment may be perylene compound. Image forming method and apparatus using the photoreceptor comprise the steps: (1) forming latent image on the photoreceptor, (2) developing for forming toner image, (3) transferring the image and (4) cleaning the residual toner. The detachable process cartridge using the photoreceptor is also claimed. Clear images without **black** dots are obtained.

IT 5521-31-3 55034-79-2 55034-81-6
107642-15-9

RL: DEV (Device component use); USES (Uses)
(electrophotog. photoreceptor with charge-generating layer containing N-type pigment and charge-transporting layer)

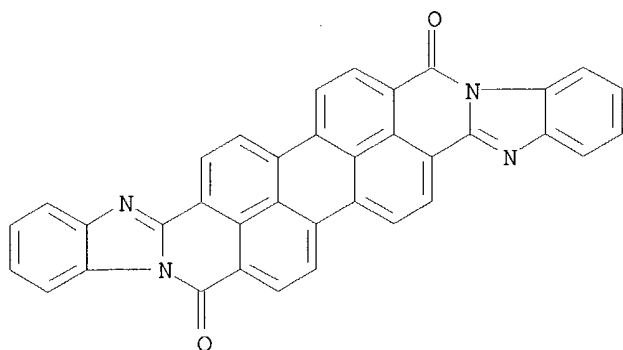
RN 5521-31-3 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-dimethyl- (9CI) (CA INDEX NAME)



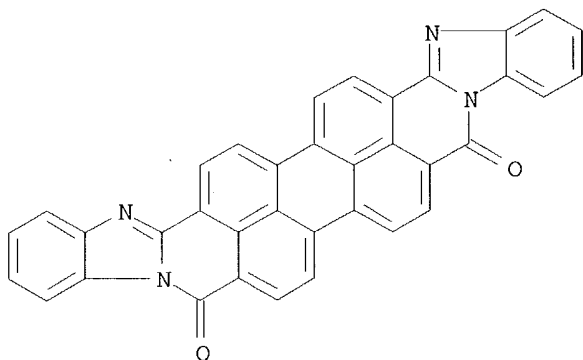
RN 55034-79-2 HCA

CN Bisbenzimidazo[2,1-a:2',1'-a']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-10,21-dione (9CI) (CA INDEX NAME)

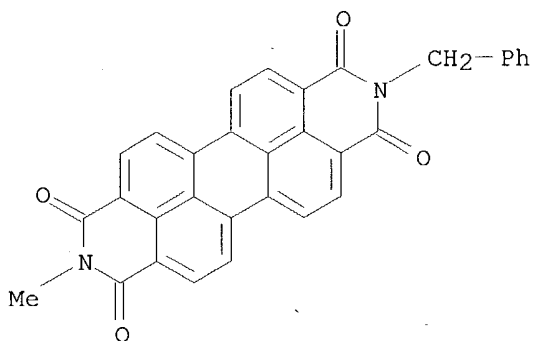


RN 55034-81-6 HCA

CN Bisbenzimidazo[2,1-a:1',2'-b']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-6,11-dione (9CI) (CA INDEX NAME)



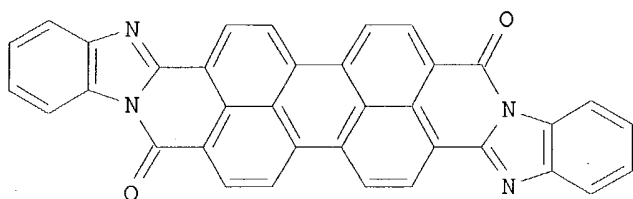
RN 107642-15-9 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2-methyl-9-(phenylmethyl)- (9CI) (CA INDEX NAME)



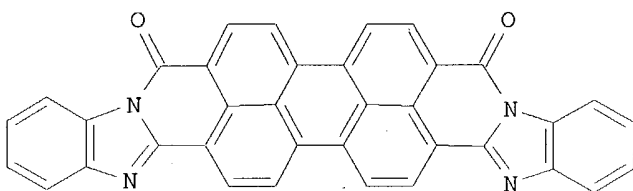
IC ICM G03G005-06
 ICS G03G015-04
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 IT **5521-31-3** 26201-32-1, Titanyl phthalocyanine **55034-79-2**
55034-81-6 70477-70-2 **107642-15-9** 134579-36-5
 RL: DEV (Device component use); USES (Uses)
 (electrophotog. photoreceptor with charge-generating layer containing
 N-type pigment and charge-transporting layer)

L57 ANSWER 4 OF 23 HCA COPYRIGHT 2004 ACS on STN
 138:18031 Method and apparatus for forming image using photoreceptor
 containing non-charge-generating perylene pigment in photosensitive layer.
 Shibata, Toyoko; Kitahara, Yoko (Konica Co., Japan). Jpn. Kokai Tokkyo
 Koho JP 2002351104 A2 20021204, 14 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 2001-153778 20010523.

GI



I



II

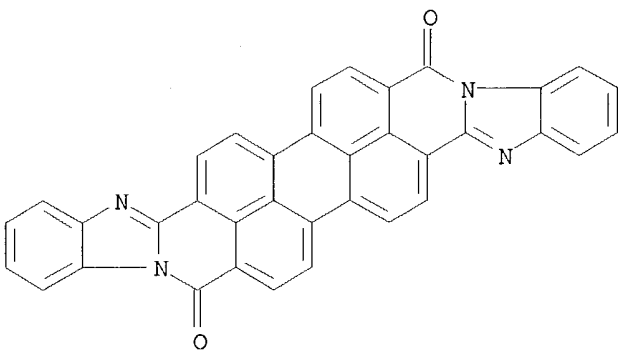
AB The process uses an electrophotog. photoreceptor which has an acid-paste-treated elec. conductive support, contains ≥ 1 non-charge-generating organic pigment in a photosensitive layer, and is exposed by a semiconductor laser having ≤ 700 nm. The non-charge-generating organic pigment may include a perylene pigment mixture containing I and II. The uses of above perylene pigments and the semiconductor laser showed high sensitivity in visible region, and provided excellent images free of **black** spots.

IT 55034-79-2 55034-81-6

RL: DEV (Device component use); USES (Uses)
(electrophotog. photoreceptor containing non-charge-generating perylene pigment in photosensitive layer)

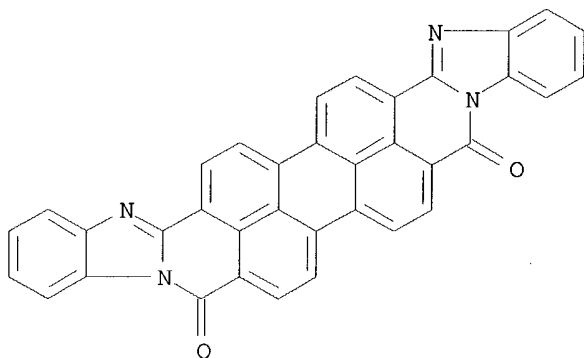
RN 55034-79-2 HCA

CN Bisbenzimidazo[2,1-a:2',1'-a']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-10,21-dione (9CI) (CA INDEX NAME)

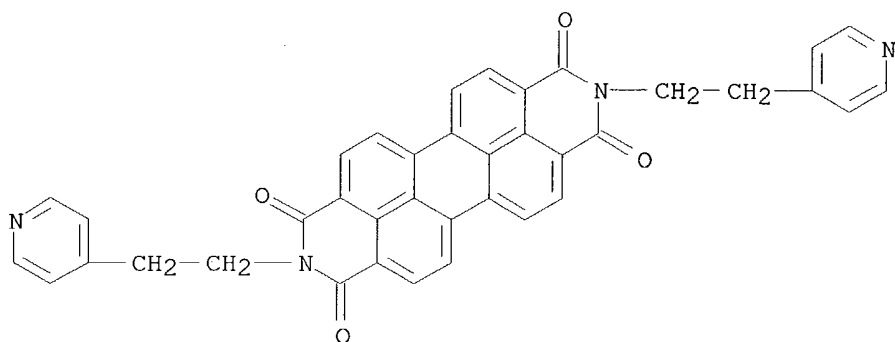


RN 55034-81-6 HCA

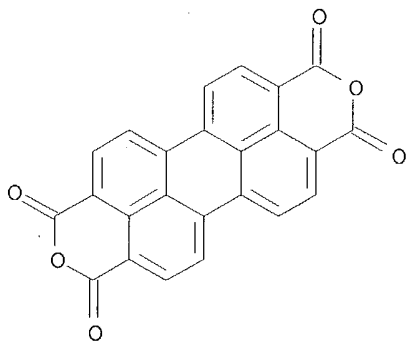
CN Bisbenzimidazo[2,1-a:1',2'-b']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-6,11-dione (9CI) (CA INDEX NAME)



- IC ICM G03G005-05
ICS G03G005-05; G03G005-06
- CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 41
- IT 198-55-0D, Perylene, derivative **55034-79-2 55034-81-6**
RL: DEV (Device component use); USES (Uses)
(electrophotog. photoreceptor containing non-charge-generating perylene pigment in photosensitive layer)
- L57 ANSWER 5 OF 23 HCA COPYRIGHT 2004 ACS on STN
- 137:224468 Crystal structure of N,N'-bis(2-(4-pyridyl)ethyl)perylene-3,4:9,10-bis(dicarboximide), C₃₈H₂₄N₄O₄. Mizuguchi, J.; Tojo, K. (Graduate School of Engineering, Department of Applied Physics, Yokohama National University, Yokohama, 240-8501, Japan). Zeitschrift fuer Kristallographie - New Crystal Structures, 217(2), 247-248 (English) 2002. CODEN: ZKNSFT. ISSN: 1433-7266. Publisher: R. Oldenbourg Verlag.
- AB The title compound is orthorhombic, space group Pccn, a 25.957(2), b 15.199(1), c 6.7114(6) Å, Z = 4, Rgt(F) = 0.058, wRref(F₂) = 0.056, T = 93 K. Atomic coordinates are given. The mol. structure of the title compound differs only in pyridyl Et group from the com. **black** pigment with Ph Et one (PB31, BASF). Nevertheless, the color in the solid state is striking different. The former exhibits a vivid red while the latter is **black**. This is obviously due to intermol. interactions as caused by mol. arrangement. This difference is discussed.
- IT **215726-24-2**
RL: PRP (Properties)
(crystal structure of)
- RN 215726-24-2 HCA
- CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis[2-(4-pyridinyl)ethyl]- (9CI) (CA INDEX NAME)



IT **128-69-8**, Perylene-3,4,9,10-tetracarboxylic dianhydride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of (aminoethyl)pyridine with)
 RN 128-69-8 HCA
 CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



CC 75-8 (Crystallography and Liquid Crystals)
 Section cross-reference(s): 28
 IT **215726-24-2**
 RL: PRP (Properties)
 (crystal structure of)
 IT **128-69-8**, Perylene-3,4,9,10-tetracarboxylic dianhydride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of (aminoethyl)pyridine with)
 L57 ANSWER 6 OF 23 HCA COPYRIGHT 2004 ACS on STN
 127:249416 Pigments in electron-beam curing systems. Dulog, Lothar;
 Schweiger, Heinz (Wildberg-Gueltingen, Germany). Farbe + Lack, 103(8),
 30,32,34,37-38,40,42-44 (German) 1997. CODEN: FALAAA. ISSN: 0014-7699.
 Publisher: Vincentz.
 AB Various classes of organic, inorg., and fluorescent pigments dispersed in
 polyurethane, polyether, and polyester acrylates and applied to
 polypropylene films were assessed with regard to their suitability for use
 in electron-beam curing printing inks. Samples were exposed to electron
 beam doses of 8, 80, and 150 kGy in N₂ as well as 150 kGy in air, and
 color tone changes were monitored. Some data (e.g. for yellow pigments)
 are presented and all data are available on computer disk.
 IT **81-33-4**, C.I. Pigment violet29 **128-69-8**, C.I. Pigment
 red 224 **3049-71-6**, C.I. Pigment red 178 **4948-15-6**,
 C.I. Pigment red 149 **5521-31-3**, C.I. Pigment red 179

24108-89-2, C.I. Pigment red 123 67075-37-0, C.I.

Pigment black 31 83524-75-8, C.I. Pigment

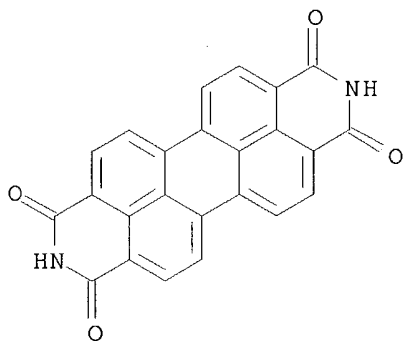
black 32

RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)

(color change of pigments in electron-beam curing printing inks)

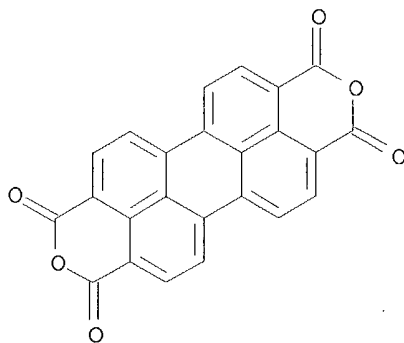
RN 81-33-4 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone
(9CI) (CA INDEX NAME)



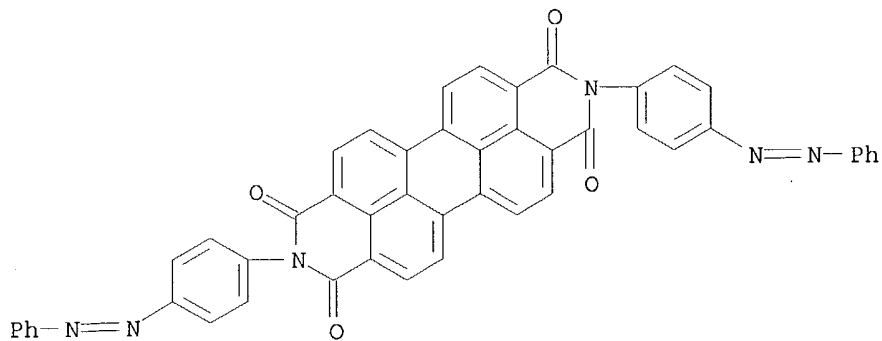
RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyrans-1,3,8,10-tetrone (9CI) (CA INDEX NAME)

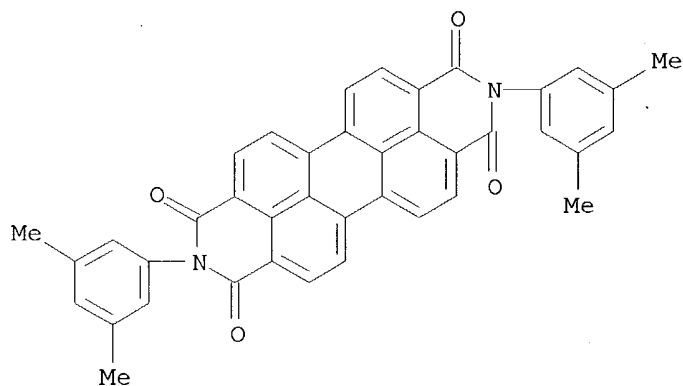


RN 3049-71-6 HCA

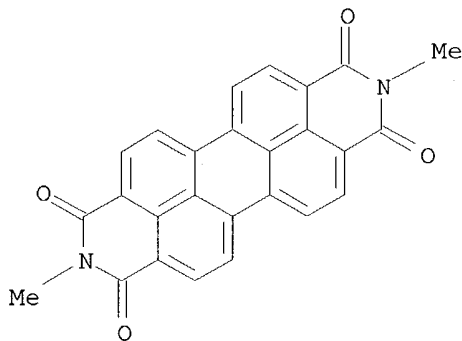
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis[4-(phenylazo)phenyl]- (9CI) (CA INDEX NAME)



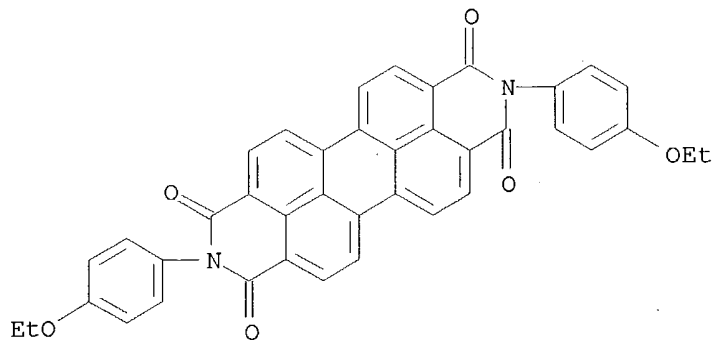
RN 4948-15-6 HCA
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis(3,5-dimethylphenyl)- (9CI) (CA INDEX NAME)



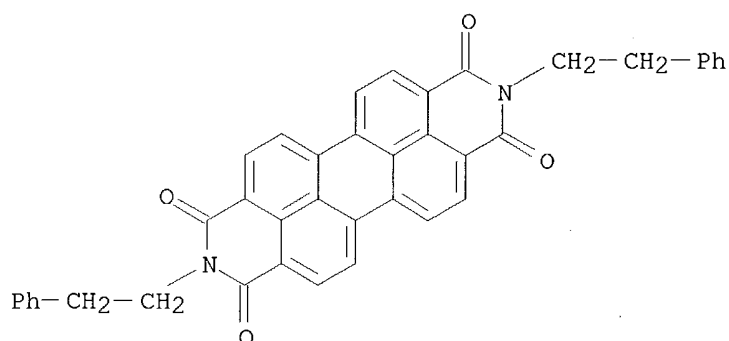
RN 5521-31-3 HCA
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-dimethyl- (9CI) (CA INDEX NAME)



RN 24108-89-2 HCA
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis(4-ethoxyphenyl)- (9CI) (CA INDEX NAME)

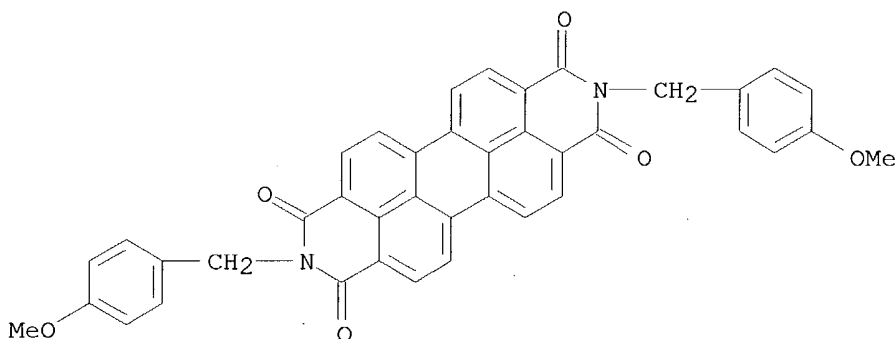


RN 67075-37-0 HCA
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis(2-phenylethyl)- (9CI) (CA INDEX NAME)



RN 83524-75-8 HCA

CN Anthra[2,1,9-def:6,5,10-d'ef']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis[(4-methoxyphenyl)methyl]- (9CI) (CA INDEX NAME)



CC 42-6 (Coatings, Inks, and Related Products)

IT Carbon **black**, properties

RL: PEP (Physical, engineering or chemical process); PRP (Properties);

PROC (Process)

(color change of pigments in electron-beam curing printing inks)

IT **81-33-4**, C.I. Pigment violet29 81-77-6, C.I. Pigment blue 60
128-69-8, C.I. Pigment red 224 147-14-8, C.I. Pigment blue 15
574-93-6, C.I. Pigment blue 16 980-26-7, C.I. Pigment red 122
1047-16-1, C.I. Pigment violet 19 1103-38-4, C.I. Pigment red 49:1
1103-39-5, C.I. Pigment red 49:2 1324-76-1, C.I. Pigment blue 61
1325-75-3, C.I. Pigment green1 1325-82-2, C.I. Pigment violet 3
1326-03-0, C.I. Pigment violet 1 1326-04-1, C.I. Pigment violet 2
1328-53-6, C.I. Pigment green7 2387-03-3, C.I. Pigment yellow 101
2425-85-6, C.I. Pigment red 3 2512-29-0, C.I. Pigment yellow 1
2786-76-7, C.I. Pigment red 170 **3049-71-6**, C.I. Pigment red 178
3089-17-6, C.I. Pigment red 202 3468-63-1, C.I. Pigment orange5
3520-72-7, C.I. Pigment orange13 3905-19-9, C.I. Pigment red 166
4051-63-2, C.I. Pigment red 177 4118-16-5, C.I. Pigment yellow 147
4216-01-7, C.I. Pigment yellow 108 4216-02-8, C.I. Pigment red 194
4378-61-4, C.I. Pigment red 168 4424-06-0, C.I. Pigment orange43
4531-49-1, C.I. Pigment yellow17 **4948-15-6**, C.I. Pigment red 149
5045-40-9, C.I. Pigment yellow 109 5102-83-0, C.I. Pigment yellow 13
5160-02-1, C.I. Pigment red 53:1 5280-66-0, C.I. Pigment red 48:4
5280-68-2, C.I. Pigment red 146 5280-78-4, C.I. Pigment red 144
5280-80-8, C.I. Pigment yellow 95 5281-04-9, C.I. Pigment red 57:1
5468-75-7, C.I. Pigment yellow 14 **5521-31-3**, C.I. Pigment red

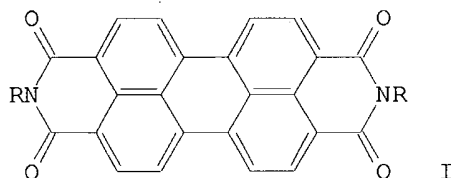
179 5567-15-7, C.I. Pigment yellow 83 5580-57-4, C.I. Pigment yellow
 93 5580-58-5, C.I. Pigment yellow 94 5590-18-1, C.I. Pigment yellow
 110 5979-28-2, C.I. Pigment yellow 16 6041-94-7, C.I. Pigment red 2
 6358-31-2, C.I. Pigment yellow 74 6358-37-8, C.I. Pigment yellow 55
 6358-85-6, C.I. Pigment yellow 12 6410-13-5, C.I. Pigment red 6
 6410-30-6, C.I. Pigment red 8 6410-32-8, C.I. Pigment red 12
 6410-38-4, C.I. Pigment red 9 6417-83-0, C.I. Pigment red 63:1
 6448-96-0, C.I. Pigment red 31 6471-49-4, C.I. Pigment red 23
 6471-50-7, C.I. Pigment red 14 6486-23-3, C.I. Pigment yellow 3
 6528-34-3, C.I. Pigment yellow 65 6535-46-2, C.I. Pigment red 112
 6985-92-8, C.I. Pigment red 175 6985-95-1, C.I. Pigment red 171
 6992-11-6, C.I. Pigment brown 25 7023-61-2, C.I. Pigment red 48:2
 7585-41-3, C.I. Pigment red 48:1 12225-08-0, C.I. Pigment violet 32
 12225-18-2, C.I. Pigment yellow 97 12236-62-3, C.I. Pigment orange 36
 12236-64-5, C.I. Pigment orange 38 12237-62-6, C.I. Pigment violet 27
 12237-63-7, C.I. Pigment red 169 12238-31-2, C.I. Pigment red 52:2
 12286-65-6, C.I. Pigment yellow 61 12286-66-7, C.I. Pigment yellow 62
 13007-86-8, C.I. Pigment **black** 1 13463-67-7, Titanium oxide
 (TiO₂), properties 13515-40-7, C.I. Pigment yellow 73 14295-43-3, C.I.
 Pigment red 88 14302-13-7, C.I. Pigment green 36 15680-42-9, C.I.
 Pigment yellow 129 15793-73-4, C.I. Pigment orange 34 15993-42-7, C.I.
 Pigment yellow 111 16143-80-9, C.I. Pigment green 8 17741-63-8, C.I.
 Pigment violet 37 21405-81-2, C.I. Pigment yellow 117 22094-93-5, C.I.
 Pigment yellow 81 23792-68-9, C.I. Pigment yellow 188 **24108-89-2**
 , C.I. Pigment red 123 29204-84-0, C.I. Pigment yellow 153 29920-31-8,
 C.I. Pigment yellow 120 30125-47-4, C.I. Pigment yellow 138
 31778-10-6, C.I. Pigment red 208 31837-42-0, C.I. Pigment yellow 151
 32432-45-4, C.I. Pigment yellow 98 35636-63-6, C.I. Pigment yellow 175
 35869-64-8, C.I. Pigment brown 23 36888-99-0, C.I. Pigment yellow 139
 40716-47-0, C.I. Pigment orange 61 43035-18-3, C.I. Pigment red 247
 51920-12-8, C.I. Pigment red 185 52320-66-8, C.I. Pigment yellow 75
 52846-56-7, C.I. Pigment orange 62 56396-10-2, C.I. Pigment red 213
 59487-23-9, C.I. Pigment red 187 60109-88-8, C.I. Pigment yellow 177
 61847-48-1, C.I. Pigment red 188 63467-26-5, C.I. Pigment orange 46
 64552-28-9, C.I. Pigment red 58:4 65212-77-3, C.I. Pigment yellow 183
67075-37-0, C.I. Pigment **black** 31 68134-22-5, C.I.
 Pigment yellow 154 68227-78-1, C.I. Pigment red 147 68259-05-2, C.I.
 Pigment red 220 68610-86-6, C.I. Pigment yellow 127 71566-54-6, C.I.
 Pigment red 221 71819-74-4, C.I. Pigment orange 48 71819-76-6, C.I.
 Pigment red 206 71819-77-7, C.I. Pigment red 207 71819-79-9, C.I.
 Pigment violet 42 72102-84-2, C.I. Pigment orange 64 72639-39-5, C.I.
 Pigment red 95 73385-03-2, C.I. Pigment yellow 169 74336-60-0, C.I.
 Pigment red 251 76199-85-4, C.I. Pigment yellow 185 78952-72-4, C.I.
 Pigment yellow 174 79953-85-8, C.I. Pigment yellow 128 80083-40-5,
 C.I. Pigment red 81:1 82338-76-9, C.I. Pigment blue 62 **83524-75-8**
 , C.I. Pigment **black** 32 84632-65-5, C.I. Pigment red 254
 85702-53-0, C.I. Pigment yellow 133 85702-54-1, C.I. Pigment red 211
 87209-55-0, C.I. Pigment violet 44 90268-23-8, C.I. Pigment yellow 126
 99402-80-9, C.I. Pigment red 184 181285-33-6, C.I. Pigment yellow 136
 195740-18-2, CH 0620 195740-38-6, GR 0611 195740-44-4, MG 0618
 195740-46-6, OR 062G 195740-47-7, OY 0612 195740-50-2, PGWH 1793T
 195740-51-3, PK 0627 215247-95-3, C.I. Pigment violet 23
 RL: PEP (Physical, engineering or chemical process); PRP (Properties);
 PROC (Process)
 (color change of pigments in electron-beam curing printing inks)

L57 ANSWER 7 OF 23 HCA COPYRIGHT 2004 ACS on STN

117:193603 Preparation of **black** perylenetetracarboxylic diimide
 camouflage pigments. Kleine, Fritz (Chemiekombinat Bitterfeld, Germany).

Ger. (East) DD 299733 A7 19920507, 13 pp. (German). CODEN: GEXXA8.
APPLICATION: DD 1980-226325 19801223.

GI



AB The title pigments [I; R = 2-hydroxypropyl, Bu, 2-hydroxyethyl, 2-aminoethyl, C(:NH)NHCH, C(:NH)NH₂, NHC(:NH)NH₂, C(:NH)NHCONH₂, or 1-carbamidino-3-methyl-5-pyrazolone optionally with 4-Cl or 4-NO₂ group] are obtained by heating perylenetetracarboxylic acid or dianhydride (II) with the appropriate amine for 30-150 min at 160-230° in a C5-12 di- or trialk. or its mono or diether or an araliph. alc. or its ester. I have very little diffuse reflection (d) at 380-680 nm and very high d at 740-1280 nm. Thus, diethylene glycol 100, II 30, and ethylenediamine were heated to 110° and then kept 30 min at 200° to give 37.5 parts I (R = 2-aminoethyl).

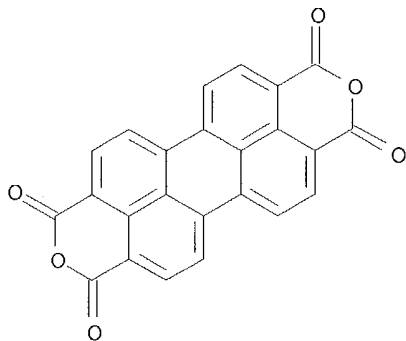
IT 128-69-8

RL: USES (Uses)

(condensation of, with amines, in preparation of camouflage pigments)

RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)

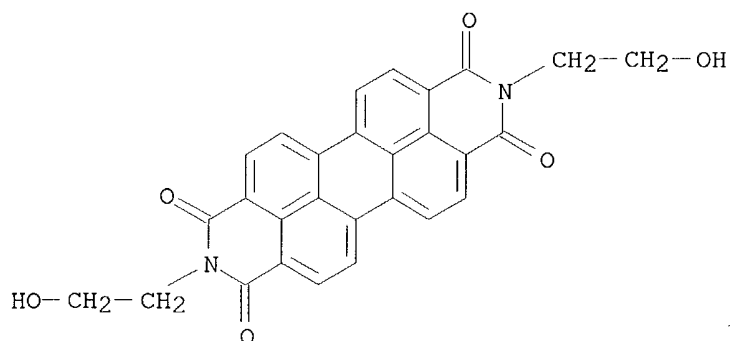


IT 26872-64-0P 28226-34-8P 52000-75-6P
87710-94-9P 143992-60-3P 143992-61-4P
143992-62-5P 143992-63-6P 143992-64-7P
143992-65-8P 143992-66-9P

RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of, as camouflage pigments)

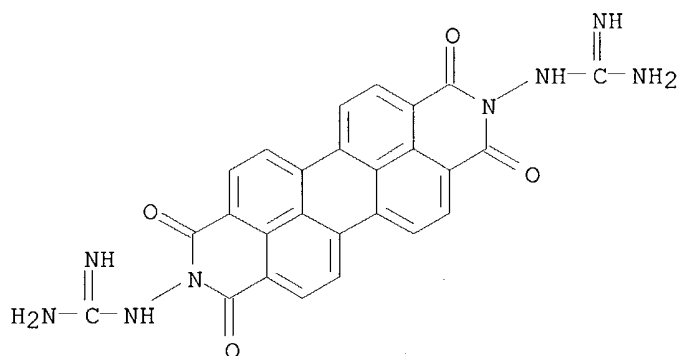
RN 26872-64-0 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis(2-hydroxyethyl)- (9CI) (CA INDEX NAME)



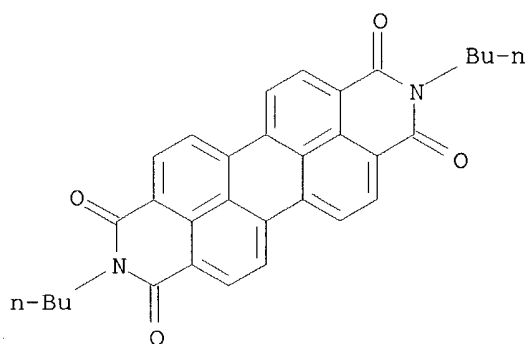
RN 28226-34-8 HCA

CN Guanidine, N,N'''-(1,3,8,10-tetrahydro-1,3,8,10-tetraoxoanthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-2,9-diyl)bis- (9CI) (CA INDEX NAME)



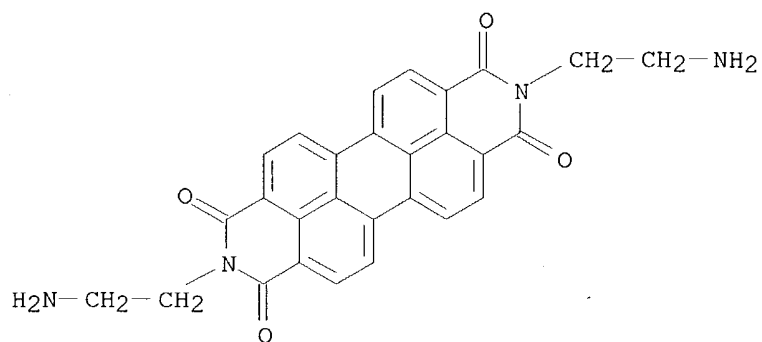
RN 52000-75-6 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-dibutyl- (9CI) (CA INDEX NAME)

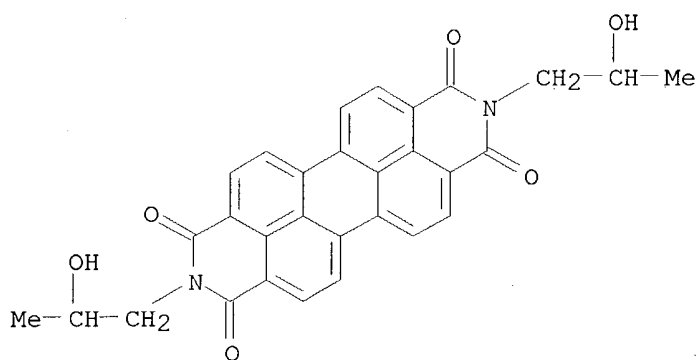


RN 87710-94-9 HCA

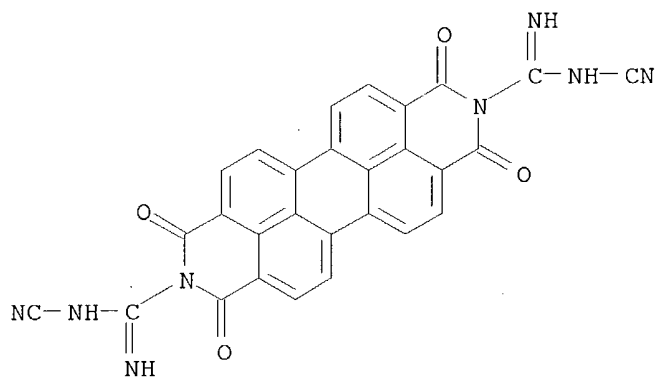
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis(2-aminoethyl)- (9CI) (CA INDEX NAME)



RN 143992-60-3 HCA

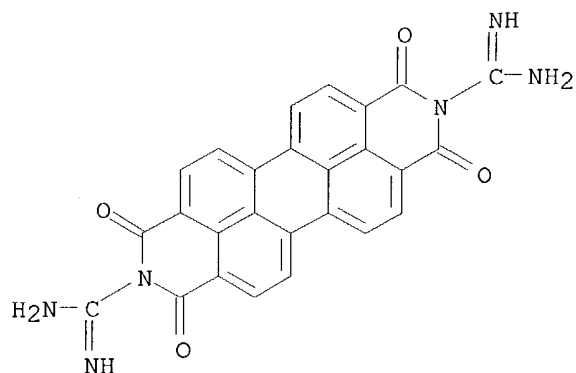
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis(2-hydroxypropyl)- (9CI) (CA INDEX NAME)

RN 143992-61-4 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-2,9-dicarboximidamide,
N,N''-dicyano-1,3,8,10-tetrahydro-1,3,8,10-tetraoxo- (9CI) (CA INDEX
NAME)

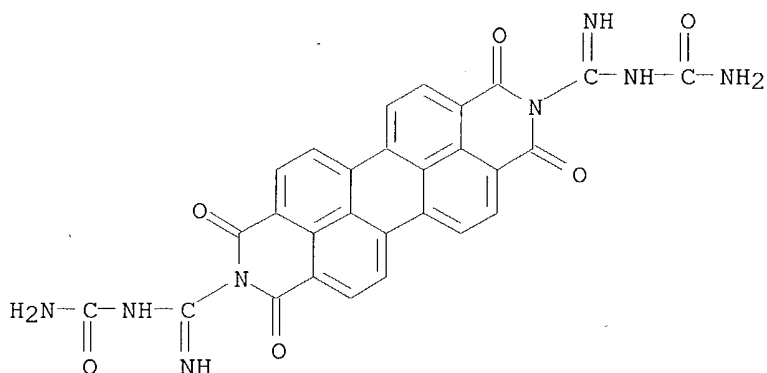
RN 143992-62-5 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-2,9-dicarboximidamide,
1,3,8,10-tetrahydro-1,3,8,10-tetraoxo- (9CI) (CA INDEX NAME)



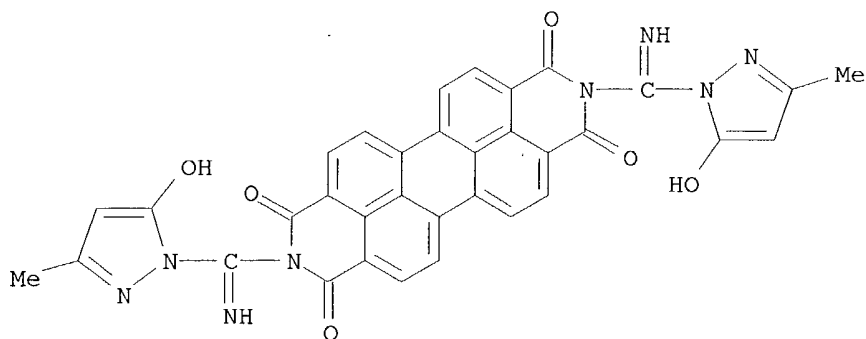
RN 143992-63-6 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-2,9-dicarboximidamide,
N,N''-bis(aminocarbonyl)-1,3,8,10-tetrahydro-1,3,8,10-tetraoxo- (9CI) (CA
INDEX NAME)



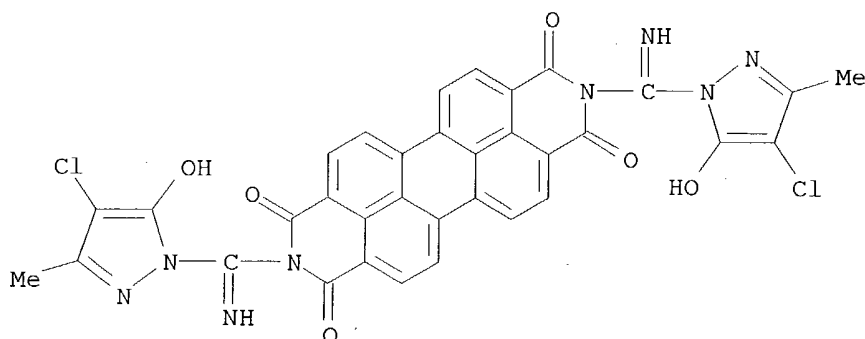
RN 143992-64-7 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis[(5-hydroxy-3-methyl-1H-pyrazol-1-yl)iminomethyl]- (9CI) (CA INDEX
NAME)



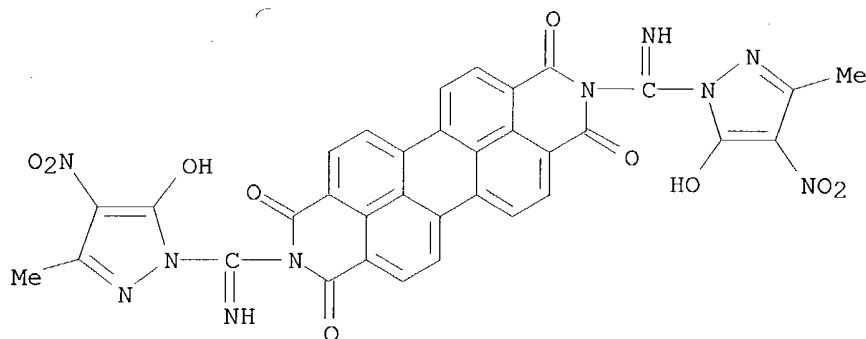
RN 143992-65-8 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis[(4-chloro-5-hydroxy-3-methyl-1H-pyrazol-1-yl)iminomethyl]- (9CI)
(CA INDEX NAME)



RN 143992-66-9 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis[(5-hydroxy-3-methyl-4-nitro-1H-pyrazol-1-yl)iminomethyl]- (9CI)
(CA INDEX NAME)



IC ICM C09B005-62

ICS C09D005-30

CC 41-5 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

IT **128-69-8** 62239-41-2, Perylenetetracarboxylic acid

RL: USES (Uses)

(condensation of, with amines, in preparation of camouflage pigments)

IT **26872-64-0P 28226-34-8P 52000-75-6P**

87710-94-9P 143992-60-3P 143992-61-4P

143992-62-5P 143992-63-6P 143992-64-7P

143992-65-8P 143992-66-9P

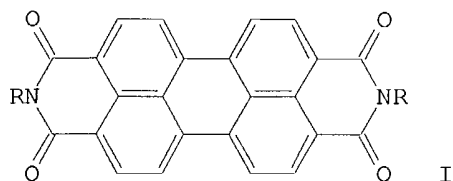
RL: IMF (Industrial manufacture); PREP (Preparation)

(preparation of, as camouflage pigments)

L57 ANSWER 8 OF 23 HCA COPYRIGHT 2004 ACS on STN

114:32929 Spectral response and xerographic electrical characteristics of some perylene bisimide pigments. Duff, J.; Hor, A. M.; Melnyk, A. R.; Teney, D. (Xerox Corp., Mississauga, ON, L5K 2L1, Can.). Proceedings of SPIE-The International Society for Optical Engineering, 1253(Hard Copy Print. Mater., Media, Processes), 183-91 (English) 1990. CODEN: PSISDG. ISSN: 0277-786X.

GI



AB The series of N,N'-disubstituted diimides of perylene-3,4,9,10-tetracarboxylic acid is of interest for 2 reasons: (a) the color of the solid pigment is markedly dependant on the nature of the substituent, and can vary from red to brown or **black** and (b) they are generally well known as effective organic photoconductors. A series of compds. I with a selection of alkyl groups having different degrees of chain branching (R=C₅H₁₁, 6 isomers) and chain length was synthesized. Thin layers of pure material were vacuum deposited onto transparent conductive substrates and spectroscopically characterized. Xerog. photoreceptors were prepared by overcoating these with a charge transport layer and the spectral photosensitivity at 400-800 nm was measured. The effect of chain length and chain branching upon solid state absorption spectrum and xerog. spectral photosensitivity is presented and compared with the properties of other perylene bisimide photoconductors.

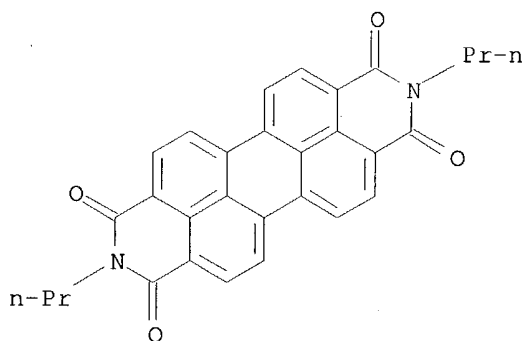
IT 59442-38-5P 67075-37-0P 70485-43-7P
76372-75-3P 82531-04-2P 110590-81-3P
117685-27-5P 131336-80-6P 131336-81-7P
131336-82-8P 131336-83-9P

RL: PREP (Preparation)

(preparation of, spectral and electrophotog. characterization of)

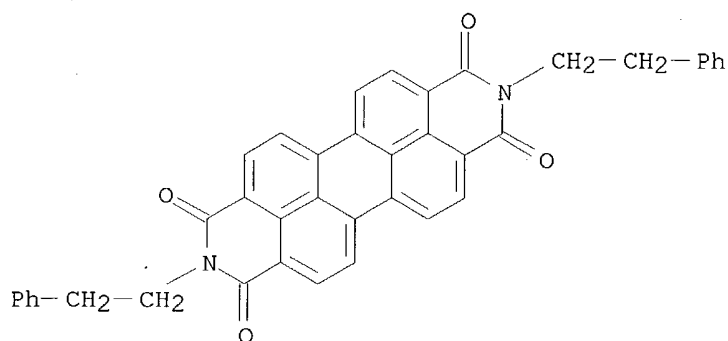
RN 59442-38-5 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-dipropyl- (9CI) (CA INDEX NAME)

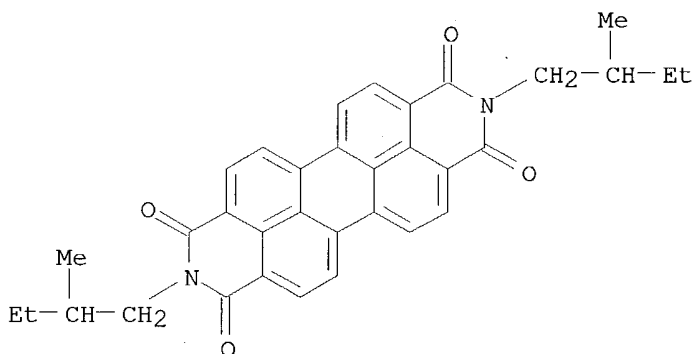


RN 67075-37-0 HCA

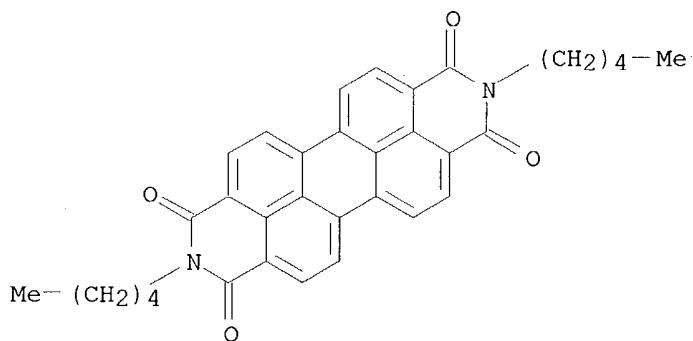
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis(2-phenylethyl)- (9CI) (CA INDEX NAME)



RN 70485-43-7 HCA

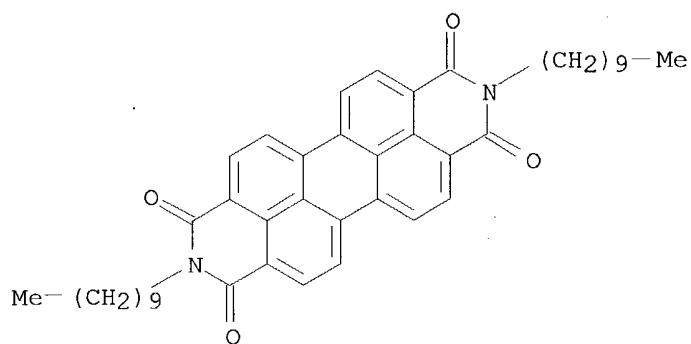
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis(2-methylbutyl)- (9CI) (CA INDEX NAME)

RN 76372-75-3 HCA

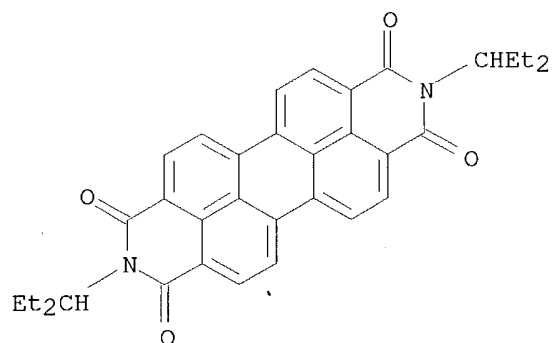
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-dipentyl- (9CI) (CA INDEX NAME)

RN 82531-04-2 HCA

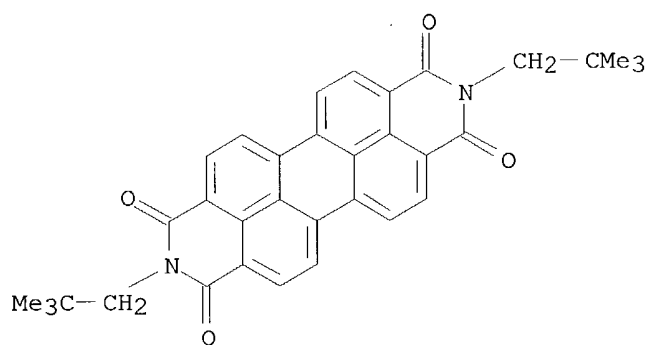
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-didecyl- (9CI) (CA INDEX NAME)



RN 110590-81-3 HCA

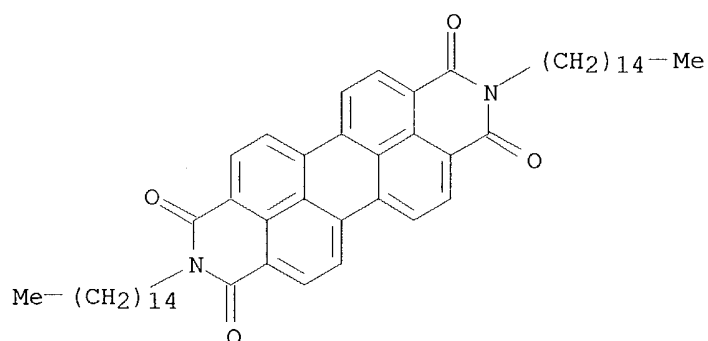
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis(1-ethylpropyl)- (9CI) (CA INDEX NAME)

RN 117685-27-5 HCA

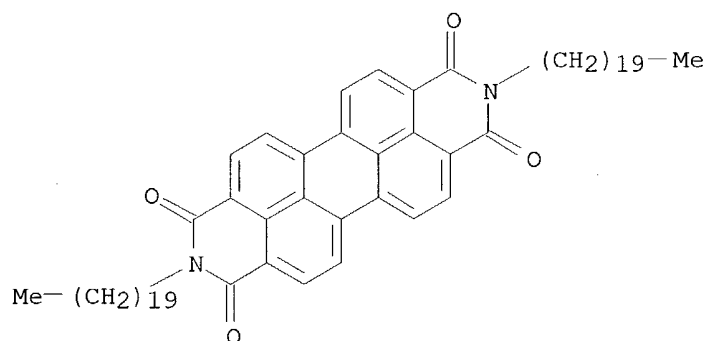
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis(2,2-dimethylpropyl)- (9CI) (CA INDEX NAME)

RN 131336-80-6 HCA

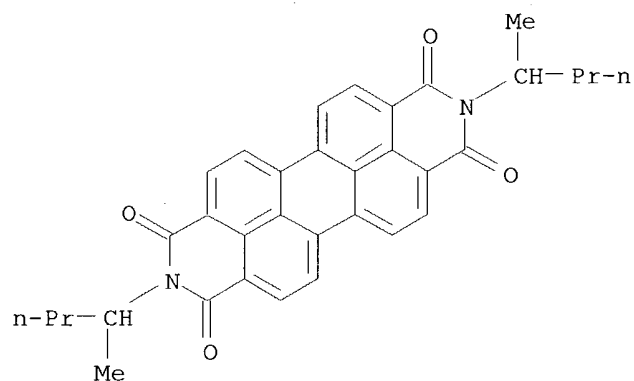
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-dipentadecyl- (9CI) (CA INDEX NAME)



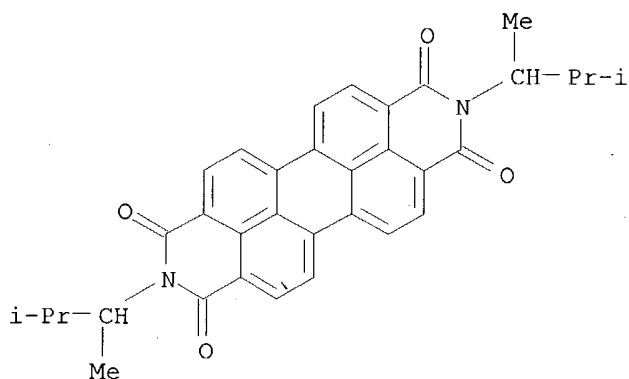
RN 131336-81-7 HCA
 CN Anthra[2,1,9-def:6,5,10-d'ef']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-dieicosyl- (9CI) (CA INDEX NAME)



RN 131336-82-8 HCA
 CN Anthra[2,1,9-def:6,5,10-d'ef']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis(1-methylbutyl)- (9CI) (CA INDEX NAME)



RN 131336-83-9 HCA
 CN Anthra[2,1,9-def:6,5,10-d'ef']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis(1,2-dimethylpropyl)- (9CI) (CA INDEX NAME)



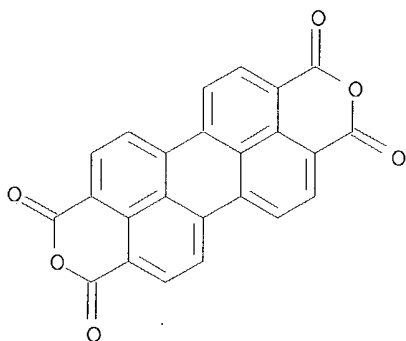
IT 128-69-8

RL: RCT (Reactant); RACT (Reactant or reagent)

(reactions of, with alkylamines, in preparation of perylene bisimide pigments for electrophotog.)

RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 21, 73, 76

IT 59442-38-5P 67075-37-0P 70485-43-7P

76372-75-3P 82531-04-2P 110590-81-3P

117685-27-5P 131336-80-6P 131336-81-7P

131336-82-8P 131336-83-9P

RL: PREP (Preparation)

(preparation of, spectral and electrophotog. characterization of)

IT 128-69-8

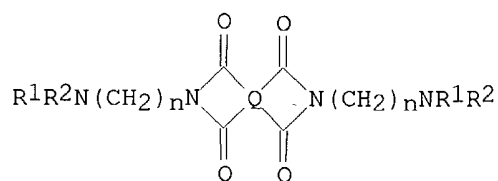
RL: RCT (Reactant); RACT (Reactant or reagent)

(reactions of, with alkylamines, in preparation of perylene bisimide pigments for electrophotog.)

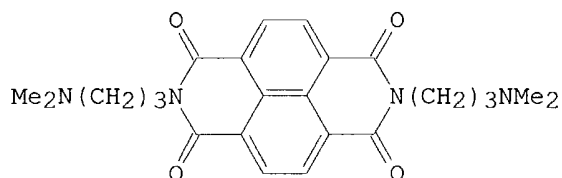
L57 ANSWER 9 OF 23 HCA COPYRIGHT 2004 ACS on STN

111:155979 Method of dispersing quinacridone pigments or carbon **black** into nonaqueous vehicles. Miki, Toshiyuki; Takeya, Mitsumasa (Sanyo Color Works, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 01051469 A2 19890227 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-209527 19870824.

GI



I



II

AB Title method uses 0.5-15 parts dispersants I (Q = naphthalene or perylene, linked to CO groups at peri positions; R1-2 = H, Me, Et; n = 2,3) per 100 parts quinacridone pigments or carbon **black**. Thus, stirring 8 parts naphthalene-1,4,5,8-tetracarboxylic dianhydride and 12 parts dimethylaminopropylamine at 80° of 1 h gave 11.9 parts naphthalene diimide II. Addition of 10 parts C.I. Pigment Violet 19 and 0.5 part II to a varnish containing Acrylic 47-712, thinner, Al2O3 beads, and Super Beckamine L-117-60 gave a composition which showed Brookfield viscosities 565 and 510 cP at 6 and 60 rpm, resp., giving a coating with gloss 86.3% and clearness rating 52.71, vs., 8880, 1602, 62.8, and 44.80, resp., without II.

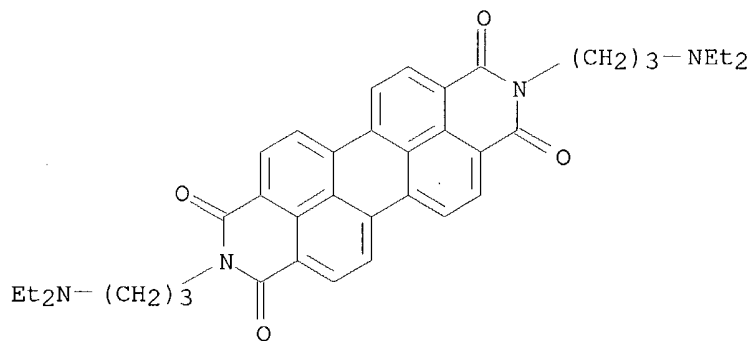
IT **85224-18-6P 113447-62-4P 117901-97-0P**

RL: PREP (Preparation)

(preparation of, as dispersants for quinacridone pigments and carbon **black**)

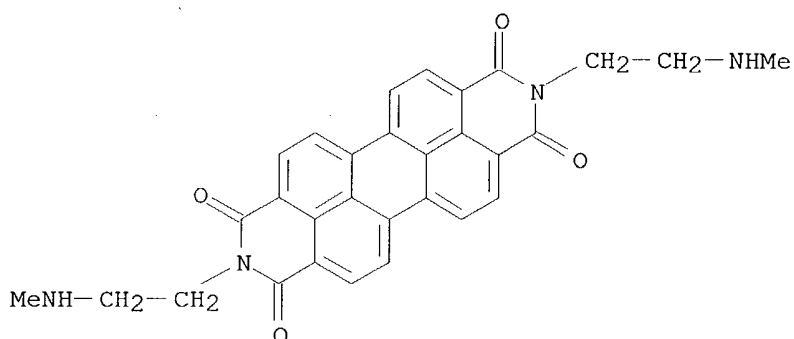
RN 85224-18-6 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis[3-(diethylamino)propyl]- (9CI) (CA INDEX NAME)



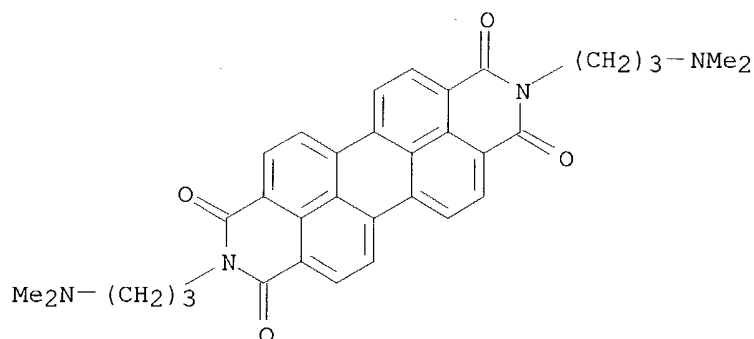
RN 113447-62-4 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis[2-(methylamino)ethyl]- (9CI) (CA INDEX NAME)



RN 117901-97-0 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis[3-(dimethylamino)propyl]- (9CI) (CA INDEX NAME)



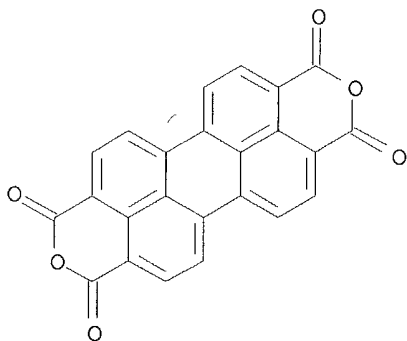
IT **128-69-8**, 3,4,9,10-Perylenetetracarboxylic dianhydride

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with alkylaminoalkylamines)

RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



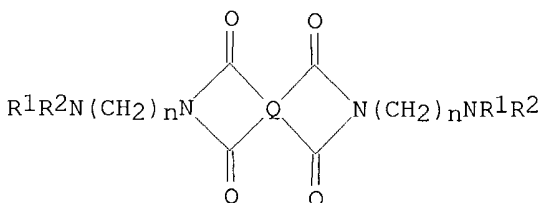
IC ICM C09B067-20

CC 42-5 (Coatings, Inks, and Related Products)

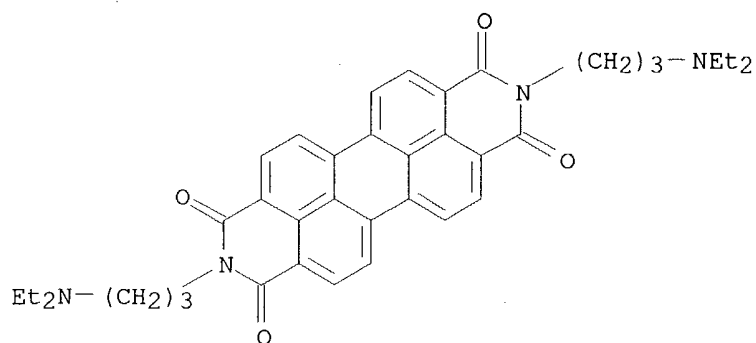
ST dispersant arom diimide pigment coating; perylene tetracarboxylic diimide
dispersant pigment; naphthalene tetracarboxylic diimide dispersant
pigment; carbon **black** dispersant arom diimide; quinacridone
pigment dispersant arom diimide

- IT Dispersing agents
(aromatic tetracarboxylic diimides, for quinacridone pigments and carbon **black** in nonaq. vehicles)
- IT Carbon **black**, uses and miscellaneous
RL: USES (Uses)
(dispersants for, MA 100, aromatic tetracarboxylic diimides as, in nonaq. vehicles)
- IT 3436-54-2P 3436-55-3P **85224-18-6P 113447-62-4P 117901-97-0P**
RL: PREP (Preparation)
(preparation of, as dispersants for quinacridone pigments and carbon **black**)
- IT 81-30-1, Naphthalene-1,4,5,8-tetracarboxylic dianhydride **128-69-8**, 3,4,9,10-Perylenetetracarboxylic dianhydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with alkylaminoalkylamines)
- L57 ANSWER 10 OF 23 HCA COPYRIGHT 2004 ACS on STN
- 110:9768 Aromatic tetraacarboxylic acid diimide dispersing agents for pigments in paints. Miki, Toshiyuki; Takeya, Mitsumasa (Sanyo Color Works, Ltd., Japan). U.S. US 4762569 A 19880809, 8 pp. (English). CODEN: USXXAM. APPLICATION: US 1987-83694 19870807.

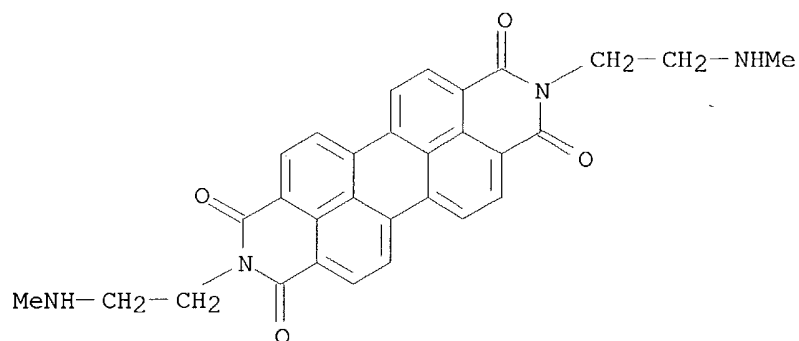
GI



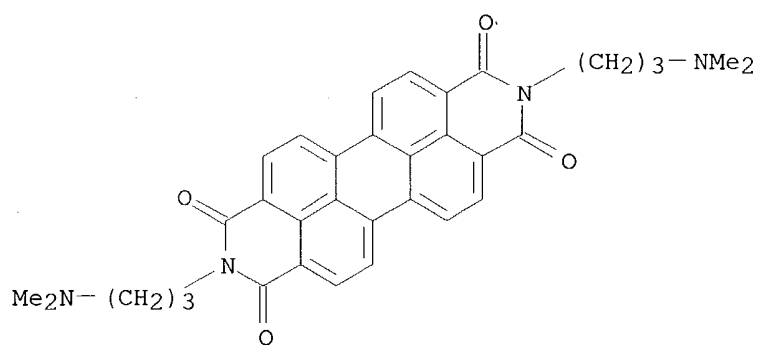
- AB Diimides I (Q = 1,4,5,8-naphthalenetetrayl, 3,4,9,10-perylenetetrayl; R1, R2 = H, Me, Et; n = 2, 3) are useful as dispersing agents for pigments in nonaq. paints. Thus, a powder containing 96 parts C.I. Pigment Red 179 and 6 parts I (Q = 3,4,9,10-perylenetetrayl; R1 = R2 = Et; n = 3) (II) (prepared by reaction of 3,4,9,10-perylenetetracarboxylic dianhydride with 3-diethylaminopropylamine) was dispersed (5 parts) in Acrylic 47-712 28.1, thinner 25, and Super Becamine L-117-60 10 parts to give a paint with Brookfield viscosities 186 and 188 cP at 6 and 60 rpm, resp., providing a film with 60°/60° gloss 84.7%, and Commission Internationale de l'Eclairage clearness rating 22.74, compared with 2,450 cP, 744 cP, 75.7%, and 20.84, resp., for a similar coating not containing II.
- IT **85224-18-6P 113447-62-4P 117901-97-0P**
RL: PREP (Preparation)
(manufacture of, for dispersants for pigments in paints)
- RN 85224-18-6 HCA
- CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis[3-(diethylamino)propyl]- (9CI) (CA INDEX NAME)



RN 113447-62-4 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis[2-(methethylamino)ethyl]- (9CI) (CA INDEX NAME)

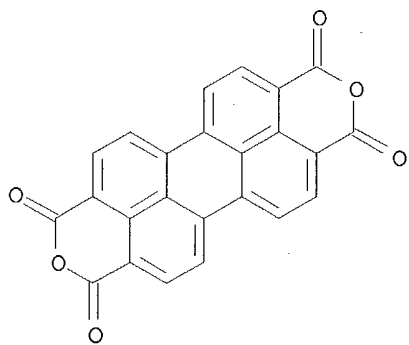


RN 117901-97-0 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis[3-(dimethylamino)propyl]- (9CI) (CA INDEX NAME)

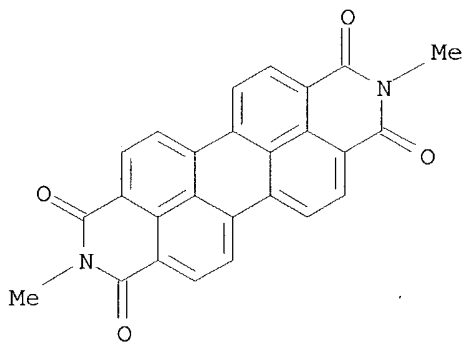


IT 128-69-8, C.I. Pigment Red 224 5521-31-3, C.I. Pigment
 Red 179
 RL: USES (Uses)
 (pigments, dispersants for, aromatic tetracarboxylic diimides as, in
 paints)

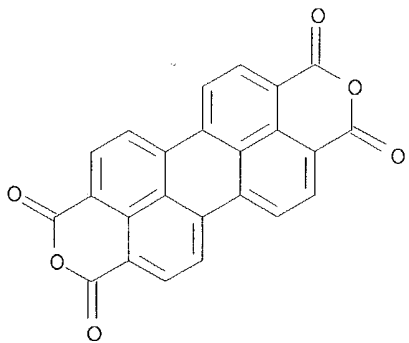
RN 128-69-8 HCA
 CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



RN 5521-31-3 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-dimethyl- (9CI) (CA INDEX NAME)



IT 128-69-8, 3,4,9,10-Perylenetetracarboxylic dianhydride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with alkylaminopropylamines)
 RN 128-69-8 HCA
 CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



IC ICM C04B014-00
 NCL 106476000
 CC 42-5 (Coatings, Inks, and Related Products)
 IT Carbon **black**, uses and miscellaneous
 RL: USES (Uses)
 (pigments, MA-100, dispersants for, aromatic tetracarboxylic diimides as,
 in paints)

IT 3436-54-2P 3436-55-3P **85224-18-6P 113447-62-4P**
117901-97-0P

RL: PREP (Preparation)

(manufacture of, for dispersants for pigments in paints)

IT **128-69-8**, C.I. Pigment Red 224 1047-16-1, C.I. Pigment Violet 19
 4424-06-0, C.I. Pigment Orange 43 **5521-31-3**, C.I. Pigment Red
 179

RL: USES (Uses)

(pigments, dispersants for, aromatic tetracarboxylic diimides as, in
 paints)

IT 81-30-1, 1,4,5,8-Naphthalenetetracarboxylic dianhydride **128-69-8**
 , 3,4,9,10-Perylenetetracarboxylic dianhydride

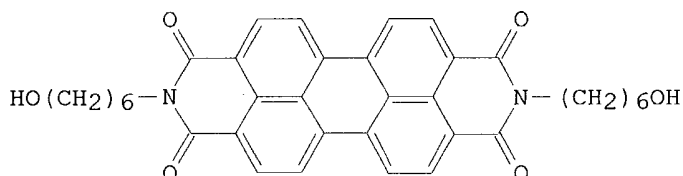
RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with alkylaminopropylamines)

L57 ANSWER 11 OF 23 HCA COPYRIGHT 2004 ACS on STN

107:156371 Perylene-3,4,9,10-tetracarboxylic acid diimide dye. Graser, Fritz
 (BASF A.-G., Fed. Rep. Ger.). Brit. UK Pat. Appl. GB 2177103 A1 19870114,
 8 pp. (English). CODEN: BAXXDU. APPLICATION: GB 1986-15482 19860625.
 PRIORITY: DE 1985-3522743 19850626.

GI



I

AB Title pigment I, which has an IR reflectance similar to that of
 chlorophyll and is thus suitable for production of camouflage colors, is
 prepared by imidation of 3,4,9,10-perylenetetracarboxylic dianhydride (II)
 with HO(CH₂)₆NH₂ (III). I is also useful as a **black** or grey dye
 for polyethylene, poly(vinyl chloride), surface coatings, inks, and aqueous
 dye formulations. Thus, a mixture of II 110, III 85, and HOCH₂CH₂OH 600
 parts was heated to 170-175° while stirring, kept at this temperature for
 .apprx.1 h, and cooled to isolate 150 parts I (m.p. ≥ 350°),
 0.25 part of which was mixed with 2.5 parts TiO₂ (rutile) and 50 parts of
 a mixture of PVC powder 65, bis(ethylhexyl) phthalate 35, and Bu₂Sn
 bis(hexyl thioglycolate). The composition was homogenized in a roll mill at
 150-160° for .apprx.8 min and milled to give hides. The hides were
 polished on a calender producing grey sheets having excellent white
 fastness.

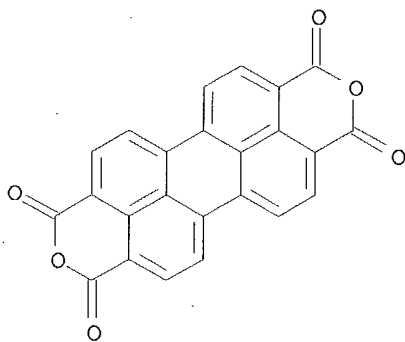
IT **128-69-8**, 3,4,9,10-Perylene tetracarboxylic dianhydride

RL: RCT (Reactant); RACT (Reactant or reagent)

(imidation of, with aminohexanol)

RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



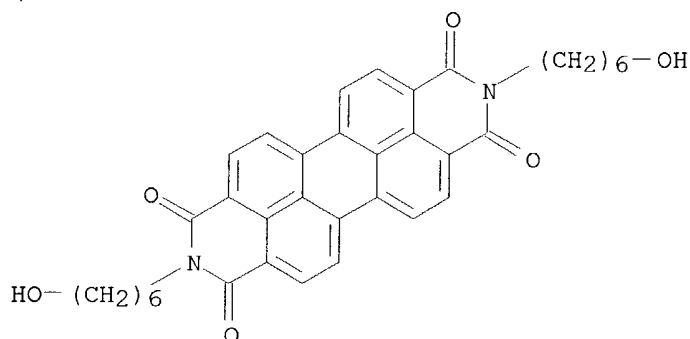
IT **107356-24-1P**

RL: PREP (Preparation)

(manufacture of, as IR-reflecting pigment for camouflage coatings and plastics)

RN 107356-24-1 HCA

CN Anthra[2,1,9-def:6,5,10-d'ef']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis(6-hydroxyhexyl)- (9CI) (CA INDEX NAME)



IC ICM C09B005-62

CC 41-5 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 28, 37, 42

ST camouflage pigment hydroxyhexylperylene-tetracarboximide; PVC camouflage pigment; **black** pigment PVC; polyvinyl chloride perylene-tetracarboxylic diimide pigment; camouflage perylene-tetracarboxylic diimide pigment

IT **128-69-8**, 3,4,9,10-Perylene tetracarboxylic dianhydride

RL: RCT (Reactant); RACT (Reactant or reagent)

(imidation of, with amino-hexanol)

IT **107356-24-1P**

RL: PREP (Preparation)

(manufacture of, as IR-reflecting pigment for camouflage coatings and plastics)

L57 ANSWER 12 OF 23 HCA COPYRIGHT 2004 ACS on STN

106:121397 N,N'-Bis(6-hydroxyhexyl)perylene-3,4,9,10-tetracarboxylic diimide.

Graser, Fritz (BASF A.-G., Fed. Rep. Ger.). Ger. Offen. DE 3620659 A1

19870122, 8 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1986-3620659

19860620. PRIORITY: DE 1985-3522743 19850626.

AB The title compound (I), useful as a pigment for preparation of IR-reflective

coatings which mimic chlorophyll and are useful for military articles, is prepared A mixture of HOCH₂CH₂OH 600, perylenetetracarboxylic dianhydride 110, and 6-hydroxyhexylamine was heated to 170-175° with stirring for 1 h, producing 150 parts I as a **black** powder, m.p. >350°.

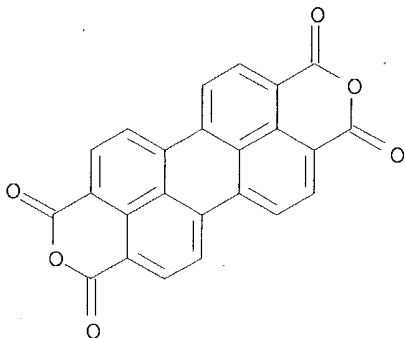
IT **128-69-8**, 3,4,9,10-Perylene-tetracarboxylic dianhydride

RL: USES (Uses)

(condensation of, with hydroxyhexylamine)

RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



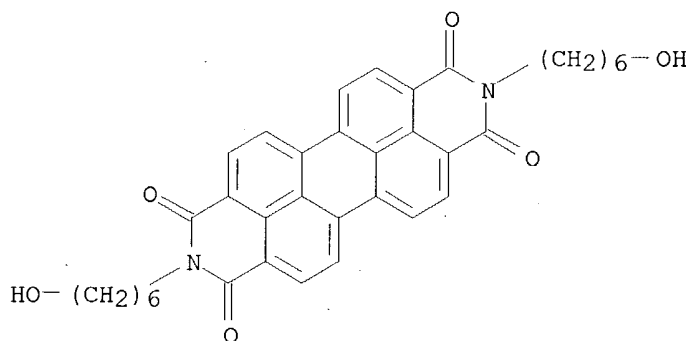
IT **107356-24-1P**

RL: PREP (Preparation)

(manufacture of, as IR-reflective pigment for camouflage coatings)

RN 107356-24-1 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis(6-hydroxyhexyl)- (9CI) (CA INDEX NAME)



IC ICM C09B005-62

ICA C09B067-20; C09D011-16; C09D017-00; C09D005-30

ICI C08J003-20, C08K005-34

CC 41-5 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 28, 37, 42

IT **128-69-8**, 3,4,9,10-Perylene-tetracarboxylic dianhydride

RL: USES (Uses)

(condensation of, with hydroxyhexylamine)

IT **107356-24-1P**

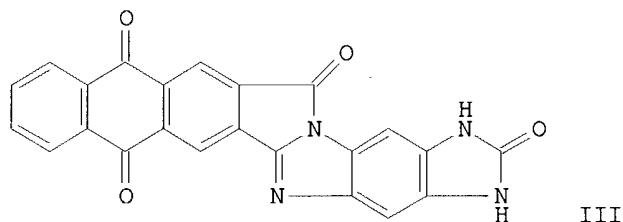
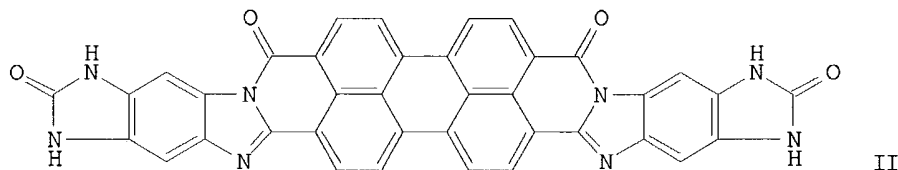
RL: PREP (Preparation)

(manufacture of, as IR-reflective pigment for camouflage coatings)

L57 ANSWER 13 OF 23 HCA COPYRIGHT 2004 ACS on STN

102:80267 Brown to **black** pigments. Kleine, Fritz; Roellig, Hans;
Viola, Horst (VEB Chemiekombinat Bitterfeld, Ger. Dem. Rep.). Ger. (East)
DD 211456 A3 19840711, 8 pp. (German). CODEN: GEXXA8. APPLICATION: DD
1982-241558 19820705.

GI



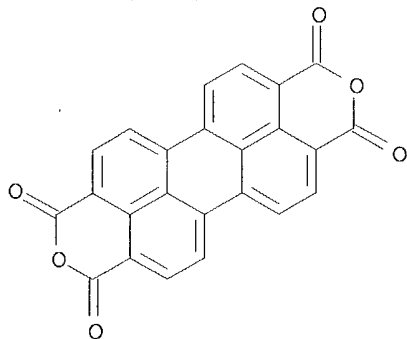
AB Brown to **black** pigments with good fastness to light and migration are prepared by condensing ortho- or peri-di- or bisdicarboxylic acids or their anhydrides with 5,6-diaminobenzimidazolone-HCl (I) [94665-87-9]. Thus, a mixture of 3,4,9,10-perylenetetracarboxylic acid dianhydride [**128-69-8**] and I in PhNO₂ containing ZnCl₂ and NaOAc was refluxed for 15-20 h to give brown-**black** II [94665-88-0] or its trans isomer [94665-89-1] or a mixture of the 2 isomers. Similarly, anthraquinone-2,3-dicarboxylic acid anhydride [6705-73-3] and I gave dark brown III [94665-90-4].

IT **128-69-8**

RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation reaction of, with diaminobenzimidazolone hydrochloride)

RN 128-69-8 HCA

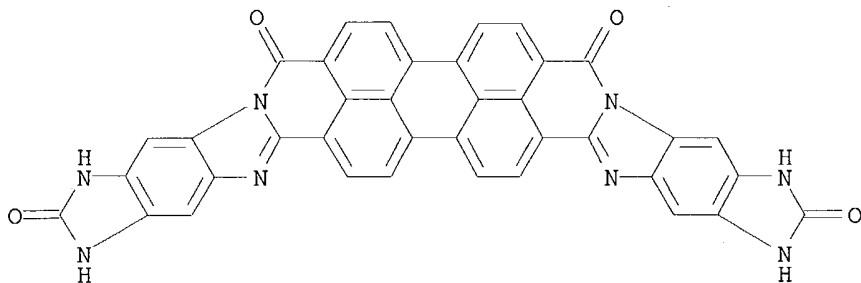
CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



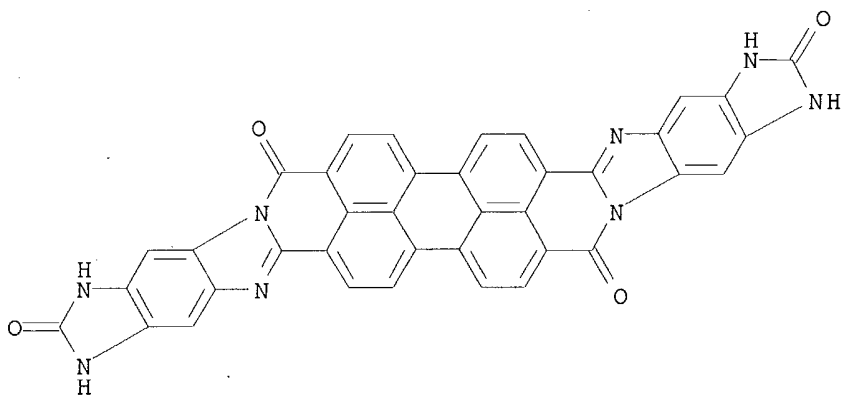
IT **94665-88-0P 94665-89-1P**

RL: IMF (Industrial manufacture); PREP (Preparation)
(pigment, manufacture of)

RN 94665-88-0 HCA
CN Bisimidazo[4',5':5,6]benzimidazo[2,1-a:2',1'-a']phenanthro[2,1,10-def:7,8,9-d'e'f']diisoquinoline-2,6,11,15-tetrone, 1,3,14,16-tetrahydro- (9CI) (CA INDEX NAME)



RN 94665-89-1 HCA
CN Bisimidazo[4',5':5,6]benzimidazo[2,1-a:2',1'-a']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-2,10,14,22-tetrone, 1,3,13,15-tetrahydro- (9CI) (CA INDEX NAME)



IC C09B057-00; C09B057-12; C09B057-08; C09B005-62; C09B019-02; C09B067-20
CC 41-1 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 37, 42

IT 128-69-8 6705-73-3

RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation reaction of, with diaminobenzimidazolone hydrochloride)

IT 94665-88-0P 94665-89-1P 94665-90-4P

RL: IMF (Industrial manufacture); PREP (Preparation)
(pigment, manufacture of)

L57 ANSWER 14 OF 23 HCA COPYRIGHT 2004 ACS on STN

101:31259 Induced crystallographic modification of aromatic compounds. Joy, David C.; Kaplan, Martin L.; Schmidt, Paul H. (Bell Telephone Laboratories, Inc., USA). U.S. US 4443532 A 19840417, 5 pp. (English). CODEN: USXXAM. APPLICATION: US 1981-288002 19810729.

AB Aromatic polycyclic compds. are described which change crystal structure upon irradiation with an electron beam. The compds. undergo transformation from one crystalline structure to another, which causes a change in optical, elec. and solubility properties. The compds. are useful as resists, for optical

storage, and in semiconductor device fabrication. Thus, a Si wafer (cleaned with solvents, treated with HF) was coated with a layer of 3,4,9,10-perylenetetracarboxylic dianhydride (by vacuum deposition) and imagewise exposed using a scanning electron microscope (electron beam energy 25 keV; current amperage $1 + 10^{-8}$ A; beam diameter .apprx.1 μ ; scan rate 100 ms/point) to give a **black** pattern on a red background of unexposed coating. Addnl. the **black** lines showed higher conductivity

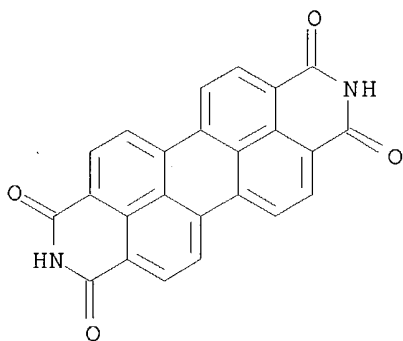
IT **81-33-4 128-69-8**

RL: USES (Uses)

(electron-beam-induced crystallog. modification of, recording and imaging applications of, in semiconductor device fabrication)

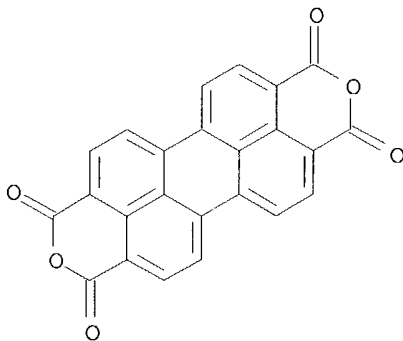
RN 81-33-4 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone (9CI) (CA INDEX NAME)



RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



IC H01L029-28

NCL 430270000

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

IT **81-33-4 128-69-8** 3711-01-1

RL: USES (Uses)

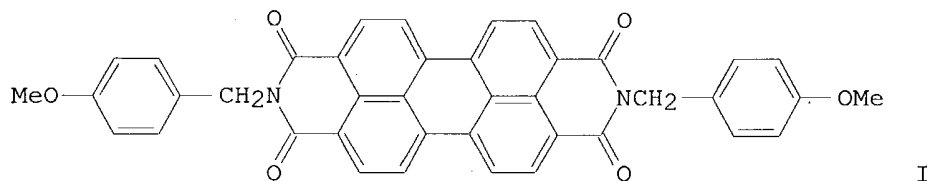
(electron-beam-induced crystallog. modification of, recording and imaging applications of, in semiconductor device fabrication)

L57 ANSWER 15 OF 23 HCA COPYRIGHT 2004 ACS on STN

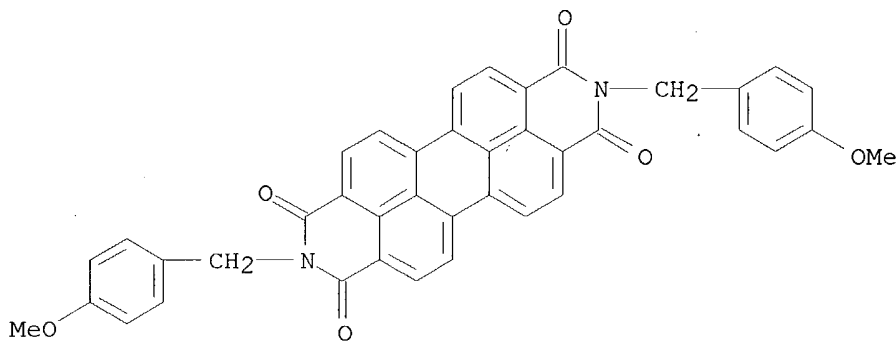
97:183949 Perylene-3,4,9,10-tetracarboxylic acid diimide pigment. Graser,

Fritz (BASF A.-G. , Fed. Rep. Ger.). Eur. Pat. Appl. EP 56870 A2
 19820804, 13 pp. DESIGNATED STATES: R: CH, DE, FR, GB, IT. (German).
 CODEN: EPXXDW. APPLICATION: EP 1981-110729 19811223. PRIORITY: DE
 1981-3101885 19810122.

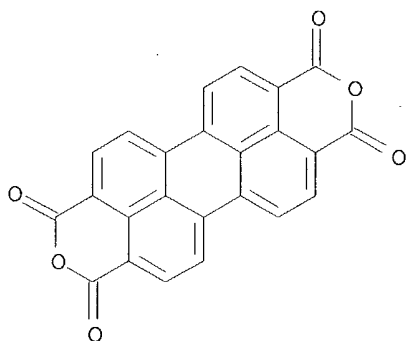
GI



- AB The title compound(I) [83524-75-8], prepared by reaction of perylene-3,4,9,10-tetracarboxylic dianhydride [128-69-8] with p-methoxybenzylamine [2393-23-9], is a light- and weather-resistant **black** to olive dye or pigment for thermoplastics, varnishes, inks, etc. I also exhibits high reflection in the IR region and thus is suitable for the preparation of camouflage color.
- IT **83524-75-8P**
 RL: PREP (Preparation)
 (manufacture of, as **black** to olive dye or pigment for coatings and plastics, with high IR reflection)
- RN 83524-75-8 HCA
- CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis[(4-methoxyphenyl)methyl]- (9CI) (CA INDEX NAME)



- IT **128-69-8**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with methoxybenzylamine)
- RN 128-69-8 HCA
- CN Perylo[3,4-cd:9,10-c'd']dipyrans-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



IC C09B005-62; C08K005-00; C09D017-00

CC 41-5 (Dyes, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 37, 42

IT **83524-75-8P**

RL: PREP (Preparation)

(manufacture of, as **black** to olive dye or pigment for coatings and plastics, with high IR reflection)

IT **128-69-8**

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with methoxybenzylamine)

L57 ANSWER 16 OF 23 HCA COPYRIGHT 2004 ACS on STN

94:32007 Influence of pigments on the degradation of polypropylene fibers on exposure to light and weather. Steinlin, Felix; Saar, W. (Basel, Switz.). Melliand Textilberichte, 61(11), 941-5 (German) 1980. CODEN: MTIRDL. ISSN: 0341-0781.

AB Pigments used in the spin dyeing of polypropylene fibers can affect the lightfastness of fibers containing hindered amine light stabilizers, i.e., Tinuvin 770 [52829-07-9]. Although many pigments do not significantly alter the effectiveness of the light stabilizer, some pigments impair the effect of the stabilizer or promote the adverse effect.

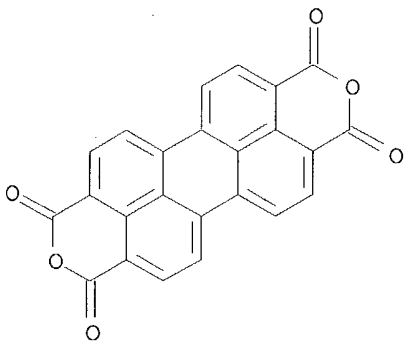
IT **128-69-8 4948-15-6**

RL: USES (Uses)

(polypropylene fibers containing Tinuvin 770 and, light- and weather-induced degradation in relation to)

RN 128-69-8 HCA

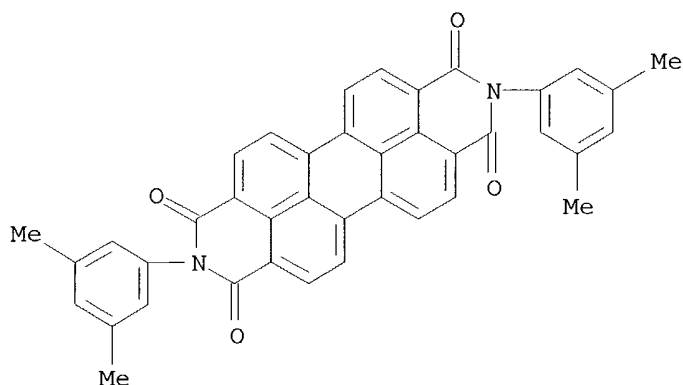
CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



RN 4948-15-6 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,

2,9-bis(3,5-dimethylphenyl)- (9CI) (CA INDEX NAME)



CC 39-7 (Textiles)

IT Pigments

Carbon **black**, uses and miscellaneous

RL: USES (Uses)

(polypropylene fibers containing Tinuvin 770 and, light- and weather-induced degradation in relation to)

IT 81-77-6 **128-69-8** 147-14-8 574-93-6 1306-23-6, reactions1328-53-6 3905-19-9 4051-63-2 4118-16-5 **4948-15-6**

5045-40-9 5280-74-0 5280-78-4 5280-80-8 5567-15-7 5580-57-4

5580-58-5 5590-18-1 7023-61-2 14295-43-3 15680-42-9 30125-47-4

40716-47-0 68259-05-2 76169-21-6 76169-22-7 76169-23-8

RL: USES (Uses)

(polypropylene fibers containing Tinuvin 770 and, light- and weather-induced degradation in relation to)

L57 ANSWER 17 OF 23 HCA COPYRIGHT 2004 ACS on STN

91:22528 Coating agents and moldings of thermoplastics containing

black pigments. Graser, Fritz (BASF A.-G., Fed. Rep. Ger.).

Brit. GB 1537358 19781229, 7 pp. (English). CODEN: BRXXAA. APPLICATION:

GB 1976-9116 19760308.

AB Coating materials, e.g. alkyd resins, polyurethanes, and stoving finishes, and molded plastics were manufactured containing

perylene-3,4,9,10-tetracarboxylic

acid bis(imide) compds. as **black** pigments. Thus,perylene-3,4,9,10-tetracarboxylic anhydride [**128-69-8**] 120,Ph(CH₂)₂NH₂ [64-04-0] 89, and water 360 parts were heated 5 h at

130-5° and 5 atm, cooled, and filtered to yield 180 parts

perylenetetracarboxylic acid bis(β-phenylethylimide) (I) [

67075-37-0] as a **black** powder. A 30% strength

full-shade paste for a stoving finish was manufactured by milling 3 parts I with 7 parts varnish binder.

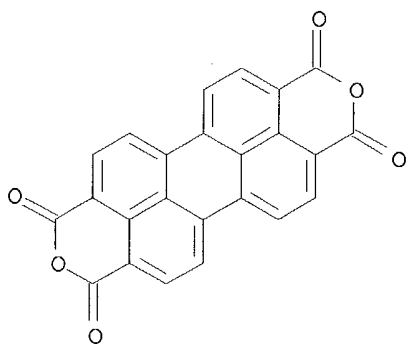
IT **128-69-8**

RL: RCT (Reactant); RACT (Reactant or reagent)

(condensation reactions of, with phenylethylamine, propylamine, and hydroxypropylamine)

RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)

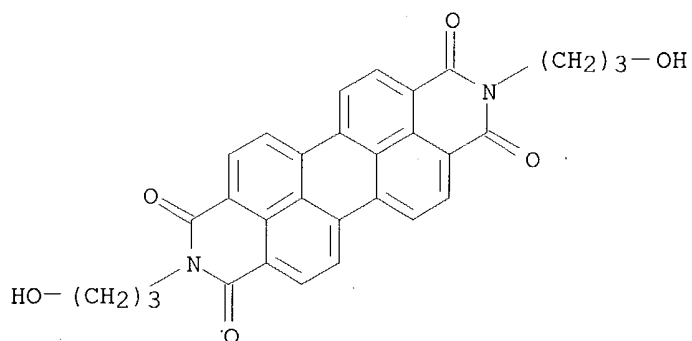


IT 59442-37-4P 59442-38-5P 67075-37-0P

RL: IMF (Industrial manufacture); PREP (Preparation)
(manufacture and use of, as **black** pigment for coating compns. and
molded plastics)

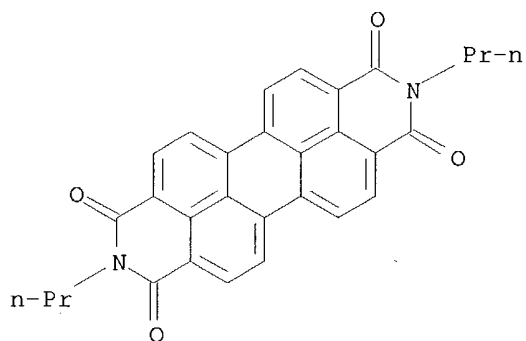
RN 59442-37-4 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis(3-hydroxypropyl)- (9CI) (CA INDEX NAME)



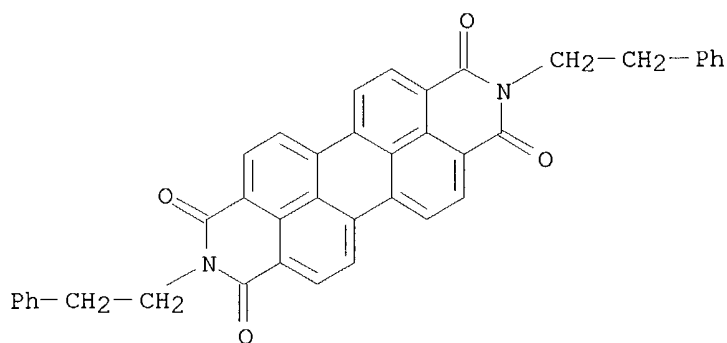
RN 59442-38-5 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-dipropyl- (9CI) (CA INDEX NAME)



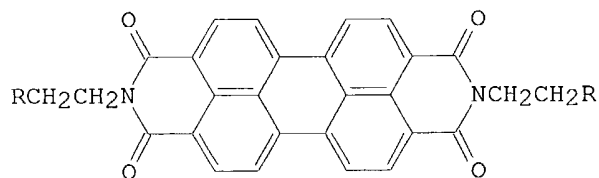
RN 67075-37-0 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis(2-phenylethyl)- (9CI) (CA INDEX NAME)



- IC C08K005-34; C09B005-62
 CC 42-5 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 28
 ST **black** pigment org imide; perylene carboxylic acid imide pigment;
 alkyd resin coating pigment; urethane polymer coating pigment; stoving
 finish **black** pigment; plastic molding **black** pigment
 IT Urethane polymers, uses and miscellaneous
 RL: TEM (Technical or engineered material use); USES (Uses)
 (coatings, **black** pigments for)
 IT Pigments
 (**black**, perylenetetracarboxylic acid bis(imides), for
 coatings)
 IT 88-99-3D, polymers with adipic acid, diol, TDI, and triol 124-04-9D,
 polymers with diol, phthalic acid, TDI, and triol 26471-62-5D, polymers
 with adipic acid, diol, phthalic acid, and triol
 RL: TEM (Technical or engineered material use); USES (Uses)
 (coatings, **black** pigments for)
 IT 128-69-8
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (condensation reactions of, with phenylethylamine, propylamine, and
 hydroxypropylamine)
 IT 59442-37-4P 59442-38-5P 67075-37-0P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (manufacture and use of, as **black** pigment for coating compns. and
 molded plastics)
- L57 ANSWER 18 OF 23 HCA COPYRIGHT 2004 ACS on STN
 89:76436 Coatings and molded parts made of thermoplastic material containing
black pigments. (BASF A.-G., Fed. Rep. Ger.). Fr. Demande FR
 2343012 19770930, 13 pp. (French). CODEN: FRXXBL. APPLICATION: FR
 1976-5810 19760302.

GI



I

- AB The incorporation of **black** pigments (I; R = Ph, Me, HOCH₂) into
 PVC [9002-86-2] coatings and in molded polyethylene [9002-88-4] give

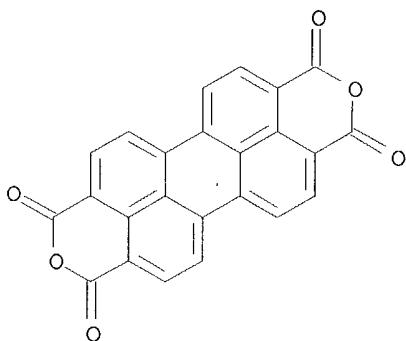
colored articles and coatings with improved fastness to light and weathering. I had better IR reflectivity than other **black** pigments. I are prepared by reaction of 3,4,9,10-perylenetetracarboxylic dianhydride [128-69-8] with RCH₂CH₂NH₂.

IT **128-69-8**

RL: RCT (Reactant); RACT (Reactant or reagent)
(imidization of)

RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



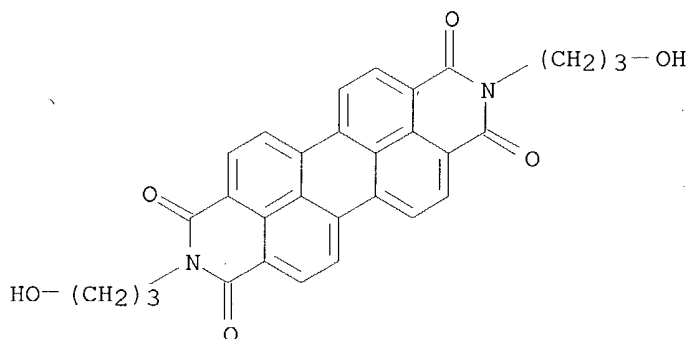
IT **59442-37-4 59442-38-5**

RL: USES (Uses)

(pigment, for coatings in molded articles, with improved light-fastness)

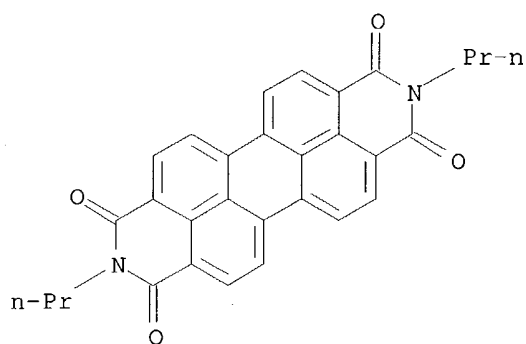
RN 59442-37-4 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis(3-hydroxypropyl)- (9CI) (CA INDEX NAME)



RN 59442-38-5 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-dipropyl- (9CI) (CA INDEX NAME)



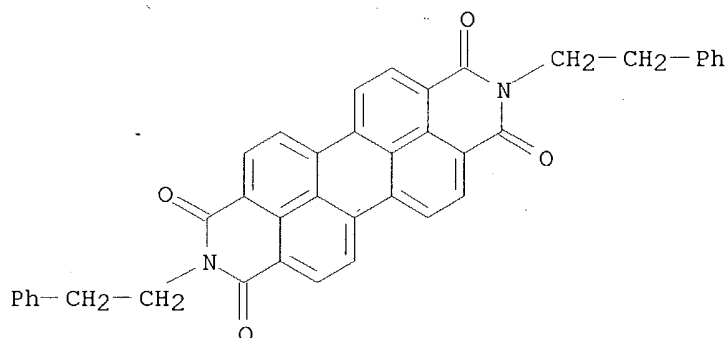
IT 67075-37-0

RL: USES (Uses)

(pigment, for coatings on molded articles, with improved light-fastness)

RN 67075-37-0 HCA

CN Anthra[2,1,9-def:6,5,10-d'ef']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis(2-phenylethyl)- (9CI) (CA INDEX NAME)



IC C08J003-20

CC 42-5 (Coatings, Inks, and Related Products)

ST perylenedicarboximide **black** pigment IR reflectivity

IT 128-69-8

RL: RCT (Reactant); RACT (Reactant or reagent)
(imidization of)

IT 59442-37-4 59442-38-5

RL: USES (Uses)

(pigment, for coatings in molded articles, with improved light-fastness)

IT 67075-37-0

RL: USES (Uses)

(pigment, for coatings on molded articles, with improved light-fastness)

L57 ANSWER 19 OF 23 HCA COPYRIGHT 2004 ACS on STN

88:38956 Binaphthyl derivative dyes. (Scientific-Research Institute of Intermediates and Dyes, USSR). Jpn. Tokkyo Koho JP 52024051 B4 19770629 Showa, 9 pp. (Japanese). CODEN: JAXXAD. APPLICATION: JP 1972-42296 19720428.

GI For diagram(s), see printed CA Issue.

AB I (R= Ph, substituted Ph, Me, cyclohexyl ,2-pyridyl), as well as II [

55034-81-6] and III [41635-87-4], and their isomers, bright red to dark blue to **black** on cotton and rayon, were prepared. For example, [1,1'-binaphthalene]-4,4',5,5',8,8'-hexacarboxylic dianhydride [49610-14-2] was treated with aniline [62-53-3] in Ac₂O to give the diimide [49610-15-3] which was treated with hydrosulfite in the presence of NaOH under air bubbling to give I (R = Ph) [128-65-4], bright red on cotton.

IT 128-65-4 2379-77-3 5521-31-3 6424-77-7

6859-32-1 41572-86-5 41635-87-4

49610-23-3 52000-77-8 55034-79-2

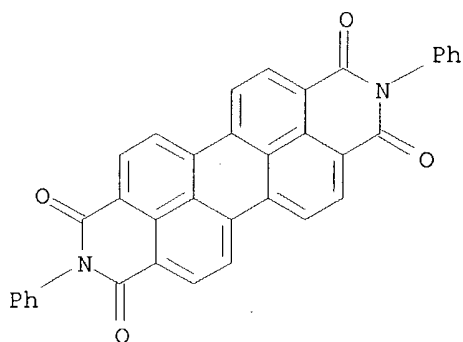
55034-81-6

RL: MSC (Miscellaneous)

(dyes, for cotton and rayon, manufacture of)

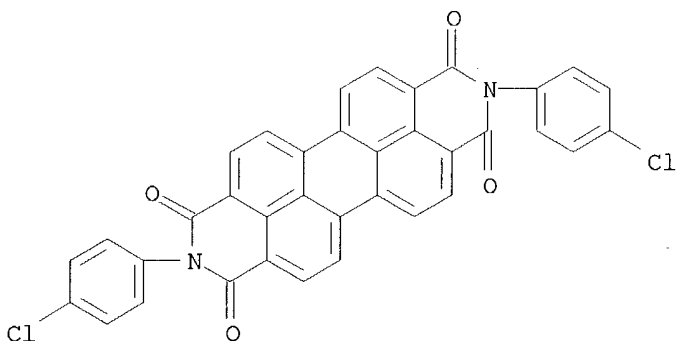
RN 128-65-4 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-diphenyl- (9CI) (CA INDEX NAME)



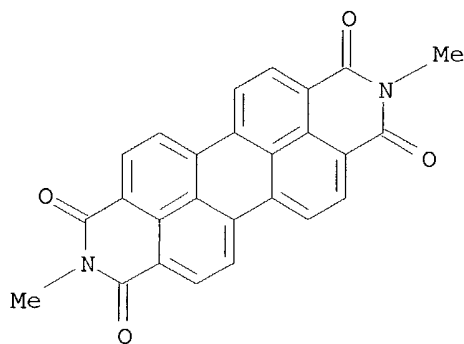
RN 2379-77-3 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis(4-chlorophenyl)- (9CI) (CA INDEX NAME)

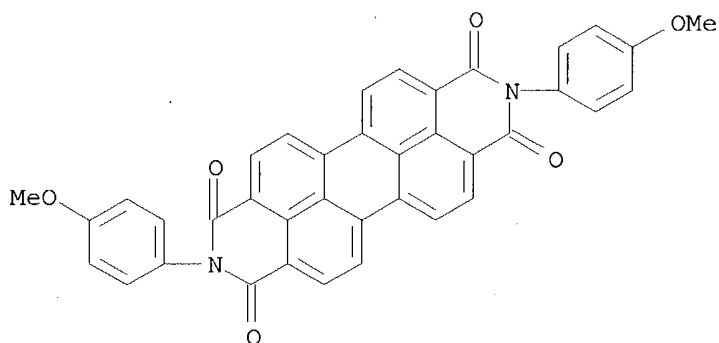


RN 5521-31-3 HCA

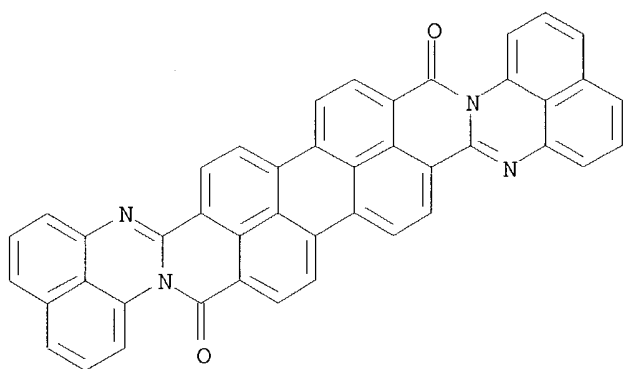
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-dimethyl- (9CI) (CA INDEX NAME)



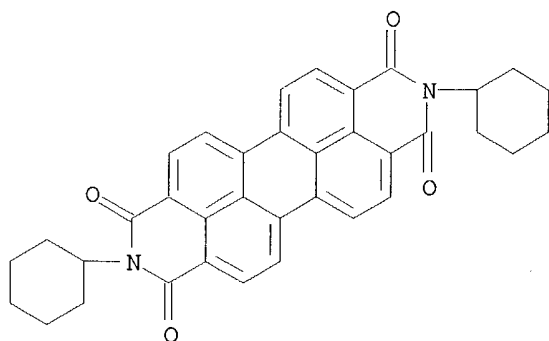
RN 6424-77-7 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



RN 6859-32-1 HCA
 CN Anthra[2'',1'',9'':4,5,6;6'',5'',10'':4',5',6']diisoquino[2,1-a:2',1'-
 a']diperimidine-12,25-dione (7CI, 8CI, 9CI) (CA INDEX NAME)

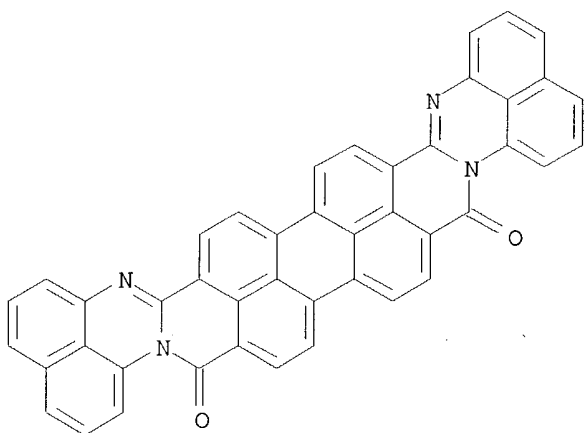


RN 41572-86-5 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-dicyclohexyl- (9CI) (CA INDEX NAME)



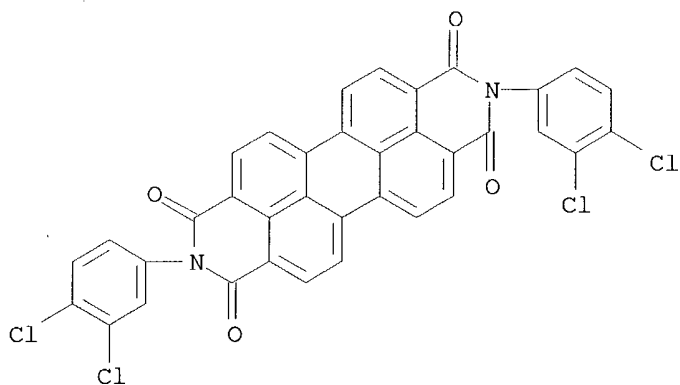
RN 41635-87-4 HCA

CN Phenanthro[2'',1'',10'':4,5,6;7'',8'',9'':4',5',6']diisoquino[2,1-a:2',1'-a']diperimidine-8,13-dione (9CI) (CA INDEX NAME)



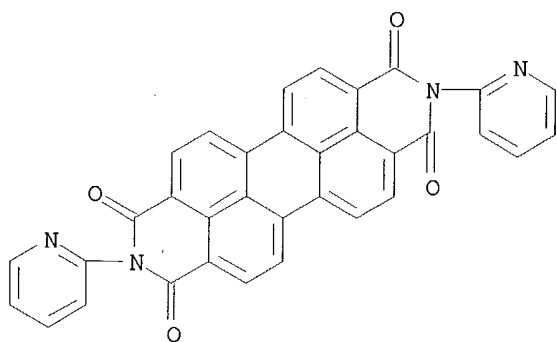
RN 49610-23-3 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis(3,4-dichlorophenyl)- (9CI) (CA INDEX NAME)

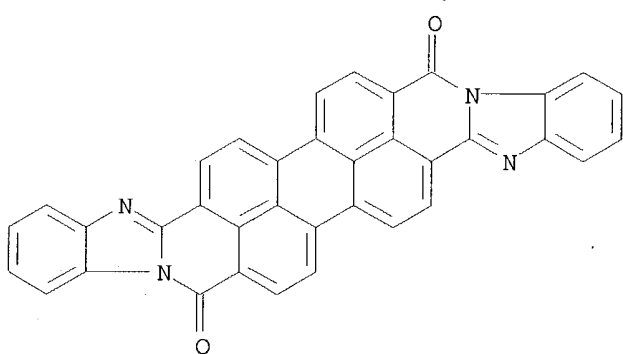


RN 52000-77-8 HCA

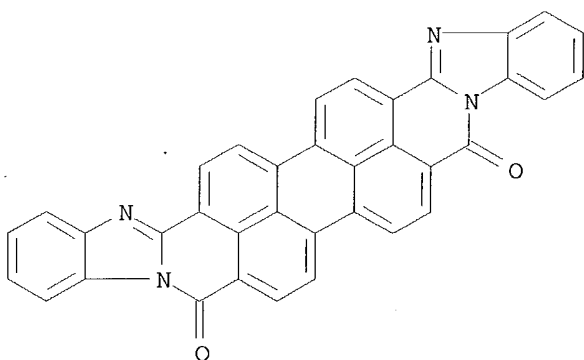
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-di-2-pyridinyl- (9CI) (CA INDEX NAME)



RN 55034-79-2 HCA
 CN Bisbenzimidazo[2,1-a:2',1'-a']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-10,21-dione (9CI) (CA INDEX NAME)



RN 55034-81-6 HCA
 CN Bisbenzimidazo[2,1-a:1',2'-b']anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-6,11-dione (9CI) (CA INDEX NAME)



IC C09B057-00
 CC 40-6 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
 Section cross-reference(s): 28
 IT 128-65-4 2379-77-3 5521-31-3 6424-77-7
 6859-32-1 41572-86-5 41635-87-4
 49610-23-3 52000-77-8 55034-79-2
 55034-81-6

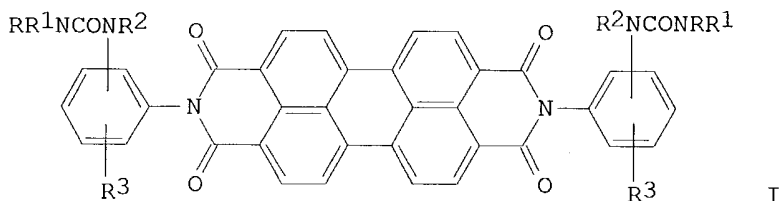
RL: MSC (Miscellaneous)

(dyes, for cotton and rayon, manufacture of)

L57 ANSWER 20 OF 23 HCA COPYRIGHT 2004 ACS on STN

87:40735 Perylene-3,4,9,10-tetracarboxylic acid diimide dyes. Graser, Fritz; Guenther, Paul (BASF A.-G., Fed. Rep. Ger.). Ger. Offen. DE 2545663 19770421, 19 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1975-2545663 19751011.

GI



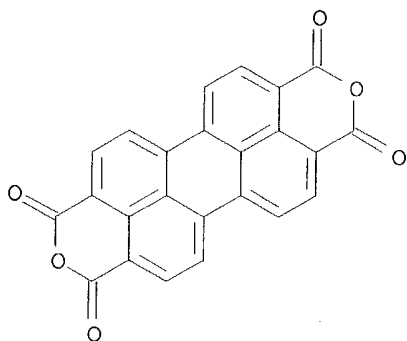
AB Heating 3,4,9,10-perylenetetracarboxylic acid [81-32-3] or its dianhydride [128-69-8] with (aminophenyl)ureas in quinoline containing Zn(OAc)₂·2H₂O gave compds. of general structure I (R = H, alkyl; R₁ alkyl, cycloalkyl, aryl; or RR₁N = saturated heterocyclic group; R₂ = H, alkyl; R₃ = halo, alkyl, alkoxy), which are especially useful as vat dyes for cotton or as pigments. Typical dyes are red-violet I [R = R₂ = H, R₁ = p-ClC₆H₄ (para substitution); R₃ = H] [62972-71-8], reddish **black** I [R = H, R₁ = p-ClC₆H₄, R₂ = Me (para substitution); R₃ = H] [63057-54-5], and dark red I [R = R₂ = H, R₁ = cyclohexyl (para substitution); R₃ = H] [62972-72-9].

IT 128-69-8

RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with (aminophenyl)ureas)

RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



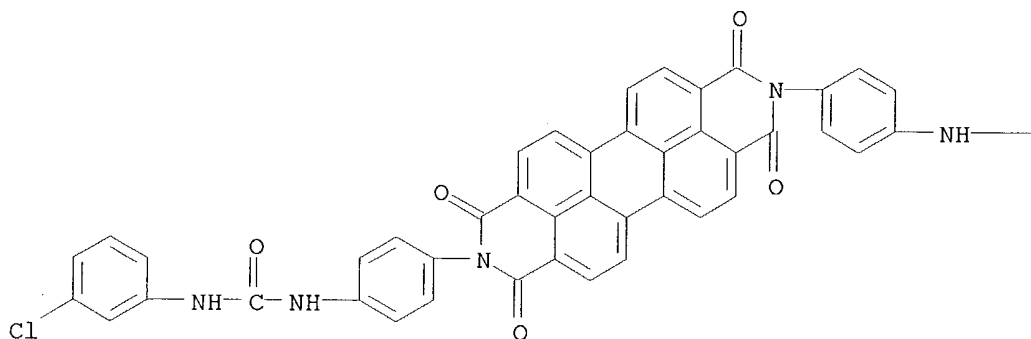
IT 63057-53-4

RL: USES (Uses)
(pigment, for coatings)

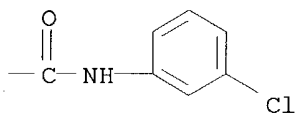
RN 63057-53-4 HCA

CN Urea, N,N'-[(1,3,8,10-tetrahydro-1,3,8,10-tetraoxoanthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-3,9-diyl)di-4,1-phenylene]bis[N'-(3-chlorophenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



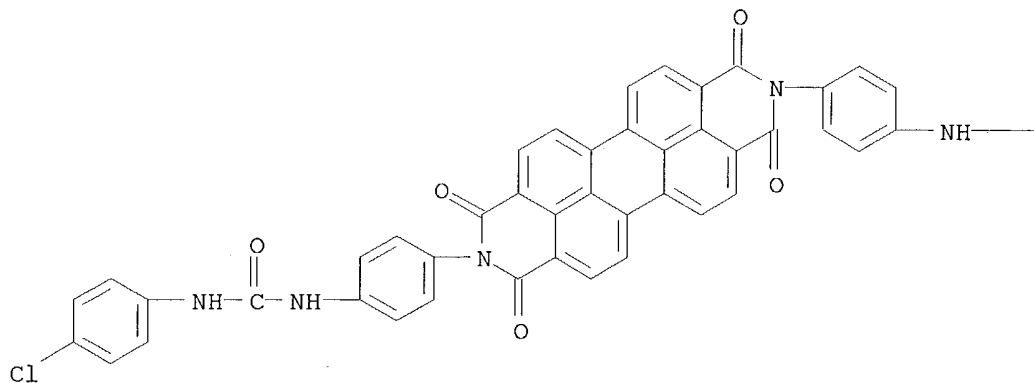
IT 62972-71-8P 62972-72-9P 63057-54-5P

RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of)

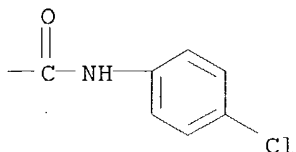
RN 62972-71-8 HCA

CN Urea, N,N'-[(1,3,8,10-tetrahydro-1,3,8,10-tetraoxoanthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-2,9-diyl)di-4,1-phenylene]bis[N'-(4-chlorophenyl)-
(9CI) (CA INDEX NAME)

PAGE 1-A



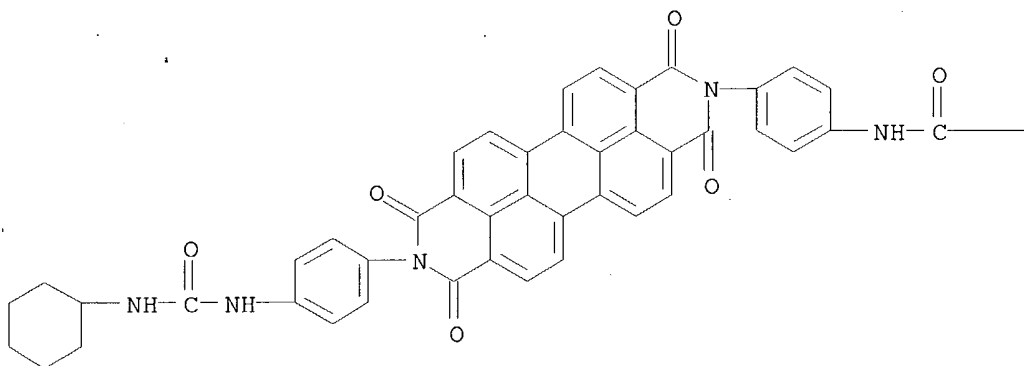
PAGE 1-B



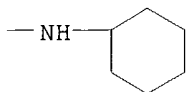
RN 62972-72-9 HCA

CN Urea, N,N'''-[(1,3,8,10-tetrahydro-1,3,8,10-tetraoxoanthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-2,9-diyl)di-4,1-phenylene]bis[N'-cyclohexyl- (9CI)
(CA INDEX NAME)

PAGE 1-A



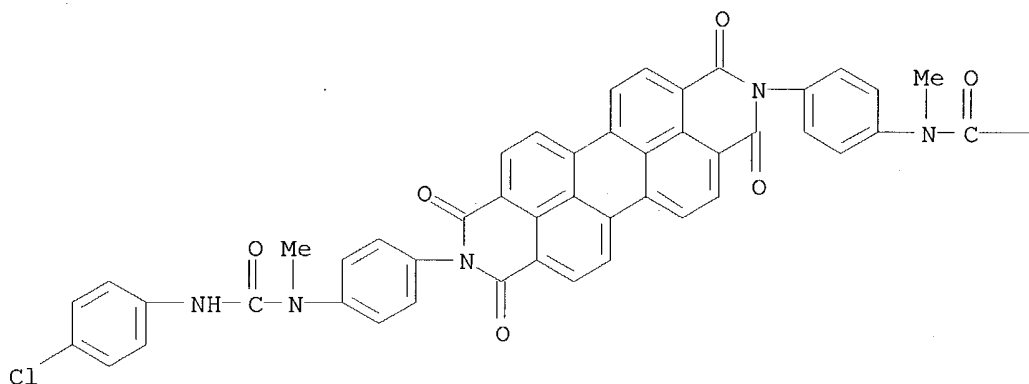
PAGE 1-B



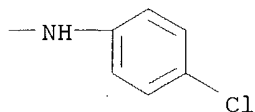
RN 63057-54-5 HCA

CN Urea, N,N'''-[(1,3,8,10-tetrahydro-1,3,8,10-tetraoxoanthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-2,9-diyl)di-4,1-phenylene]bis[N'-(4-chlorophenyl)-N-methyl- (9CI) (CA INDEX NAME)

PAGE 1-A



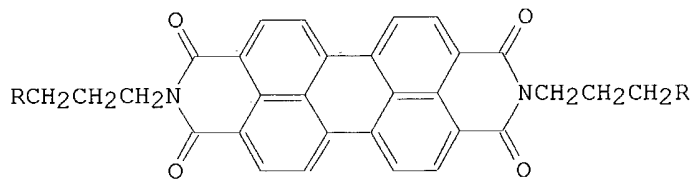
PAGE 1-B



IC C09B003-18
 CC 40-5 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
 IT **128-69-8**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (cyclocondensation of, with (aminophenyl)ureas)
 IT **63057-53-4**
 RL: USES (Uses)
 (pigment, for coatings)
 IT **62972-71-8P 62972-72-9P 63057-54-5P**
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (preparation of)

L57 ANSWER 21 OF 23 HCA COPYRIGHT 2004 ACS on STN
 85:22766 Perylenetetracarboxylic acid diimides as **black** dyes.
 Graser, Fritz (BASF A.-G., Fed. Rep. Ger.). Ger. DE 2451780 19760212, 4
 pp. (German). CODEN: GWXXAW. APPLICATION: DE 1974-2451780 19741031.

GI



I

AB PVC [9002-86-2], polyethylene [9002-88-4], lacquers, and stoving enamels

were colored fast **black** shades by perylene pigments (I, R = H, OH) prepared by treating 3,4,9,10-perylenetetracarboxylic acid anhydride [128-69-8] with RCH₂CH₂CH₂NH₂. A stoving enamel containing I (R = OH) [59442-37-4] showed low in reflectance (10-40% in the range 700-1200 nm).

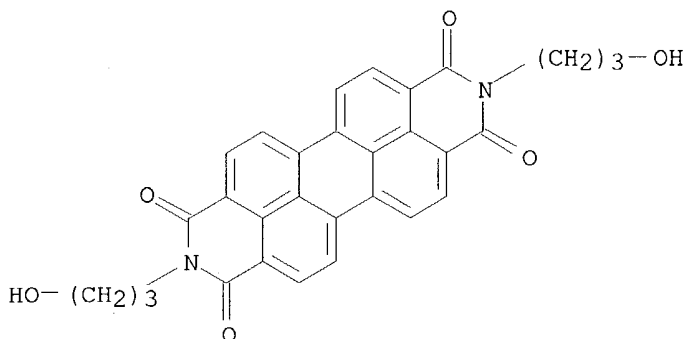
IT 59442-37-4 59442-38-5

RL: USES (Uses)

(pigment, **black**, for polyethylene, PVC and lacquers)

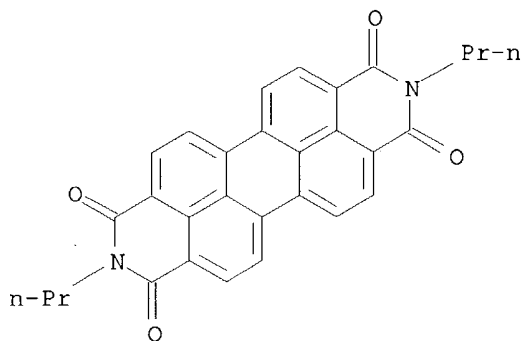
RN 59442-37-4 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis(3-hydroxypropyl)- (9CI) (CA INDEX NAME)



RN 59442-38-5 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-dipropyl- (9CI) (CA INDEX NAME)

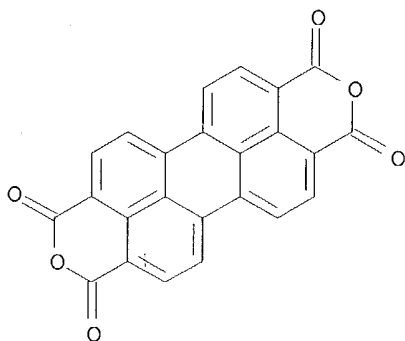


IT 128-69-8

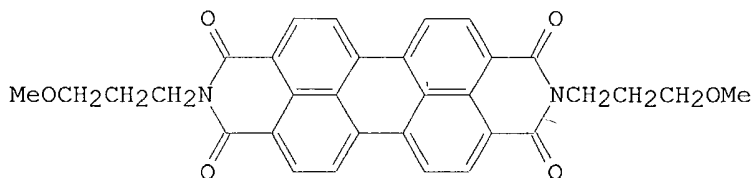
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with propylamines)

RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



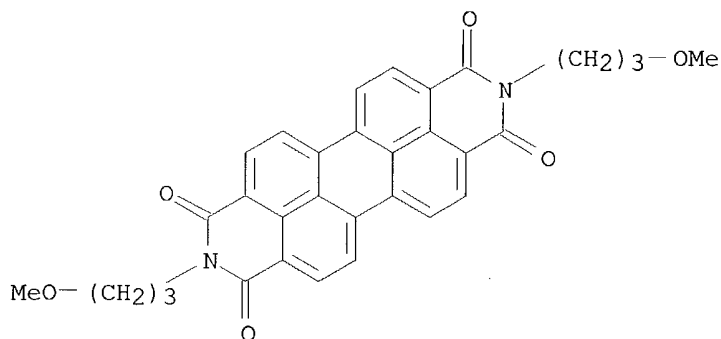
- IC C09B; C09D; C08J
 CC 40-6 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
 ST **black** perylenetetracarboxylic bisimide pigment; PVC pigment; polyethylene pigment; IR absorbing dye
 IT Pigments
 (perylenetetracarboxylic bis(propylimide) derivs. as **black**, for coatings and plastics)
 IT **59442-37-4 59442-38-5**
 RL: USES (Uses)
 (pigment, **black**, for polyethylene, PVC and lacquers)
 IT 9002-86-2 9002-88-4
 RL: USES (Uses)
 (pigments for, perylenetetracarboxylic bis(propylimide) derivs. as **black**)
 IT **128-69-8**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with propylamines)
- L57 ANSWER 22 OF 23 HCA COPYRIGHT 2004 ACS on STN
 84:152219 Perylene-3,4,9,10-tetracarboxylic acid bisimide dye. Graser, Fritz (BASF A.-G., Fed. Rep. Ger.). Ger. DE 2451781 19760108, 4 pp. (German). CODEN: GWXXAW. APPLICATION: DE 1974-2451781 19741031.
- GI



I

- AB I [**58935-22-1**] was prepared by the condensation of 3,4,9,10-perylenetetracarboxylic dianhydride [**128-69-8**] with MeOCH2CH2CH2NH2 [5332-73-0] and incorporated in PVC [9002-86-2], polystyrene [9003-53-6], polyethylene [9002-88-4] and stoving enamels giving fast orange, olive, and **black** shades.
- IT **58935-22-1**
 RL: USES (Uses)
 (pigment, for plastics and stoving enamels, preparation of)
- RN 58935-22-1 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,

2,9-bis(3-methoxypropyl)- (9CI) (CA INDEX NAME)

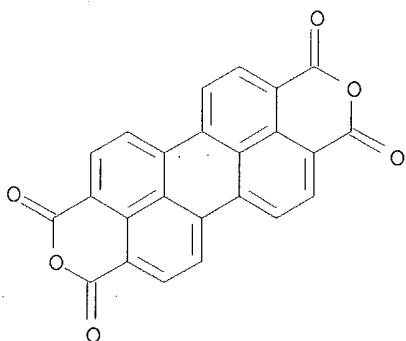


IT 128-69-8

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with methoxypropylamine)

RN 128-69-8 HCA

CN Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone (9CI) (CA INDEX NAME)



IC C09B; C09D; C08J

CC 40-6 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)

IT 58935-22-1

RL: USES (Uses)

(pigment, for plastics and stoving enamels, preparation of)

IT 128-69-8

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with methoxypropylamine)

L57 ANSWER 23 OF 23 HCA COPYRIGHT 2004 ACS on STN

83:116958 Dinaphthyl derivative dyes. (All-Union Scientific-Research Institute of Organic Intermediates and Dyes, USSR). Brit. GB 1386432 19750305, 8 pp. (English). CODEN: BRXXAA. APPLICATION: GB 1972-18866 19720424.

GI For diagram(s), see printed CA Issue.

AB The title compds., comprising seven diimides I (R = Me, Ph, p-MeOC₆H₄, p-ClC₆H₄, m,p-Cl₂C₆H₃, cyclohexyl, pyridyl) and 2 related dibenzimidazoles, prepared from 1,1'-dinaphthyl-4,4',5,5',8,8'-hexacarboxylic acid [49610-16-4] or anhydride (II) [49610-14-2] by treatment with the appropriate amine or diamine, on reduction dyed cotton, linen, and rayon fabrics red, blue-violet, and **black**. The resultant colors did not change under the effect of H₂O drops. Thus, the dye I (R = Ph) [49610-15-3], prepared from II in glacial AcOH by boiling 4 hr with PhNH₂ [62-53-3], dyed cotton bright red. The fabric was dyed by

at immersion for 1 hr in a solution containing I (R = Ph), NaOH, and hydrosulfite

80° followed by washing in cold H₂O containing H₂O₂ until bright red perylenetetracarboxylic acid N,N'-diphenyldiimide [128-65-4] formed on the fabric.

IT 128-65-4P 2379-77-3P 5521-31-3P

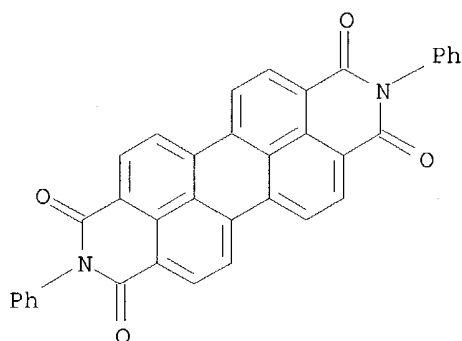
6424-77-7P 41572-86-5P 41635-87-4P

49610-23-3P 52000-77-8P 55034-81-6P

RL: IMF (Industrial manufacture); PREP (Preparation)
(dye, preparation of)

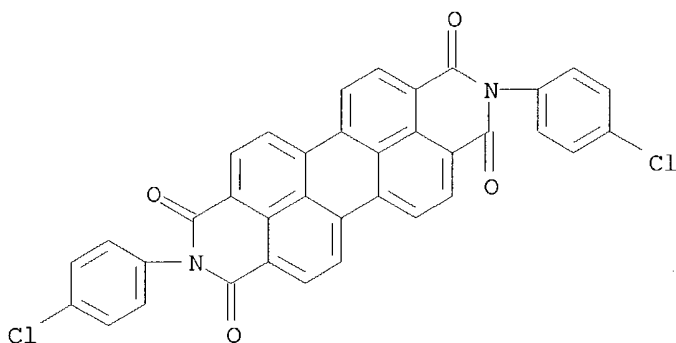
RN 128-65-4 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-diphenyl- (9CI) (CA INDEX NAME)



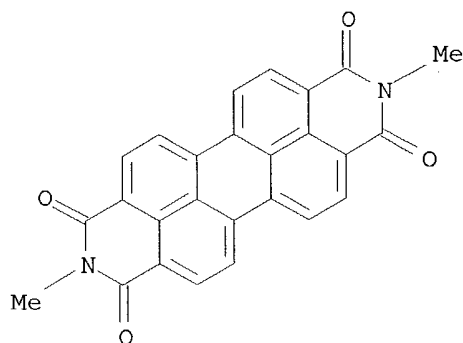
RN 2379-77-3 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-bis(4-chlorophenyl)- (9CI) (CA INDEX NAME)

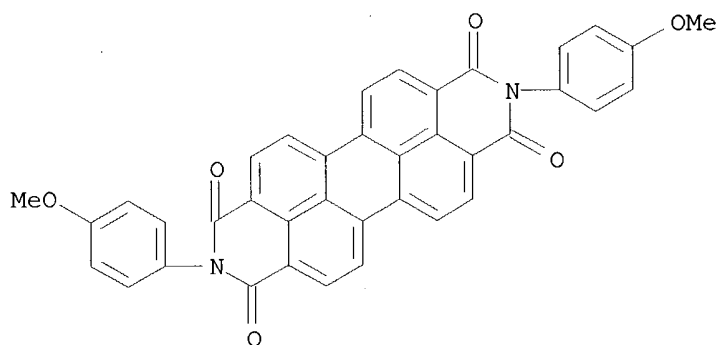


RN 5521-31-3 HCA

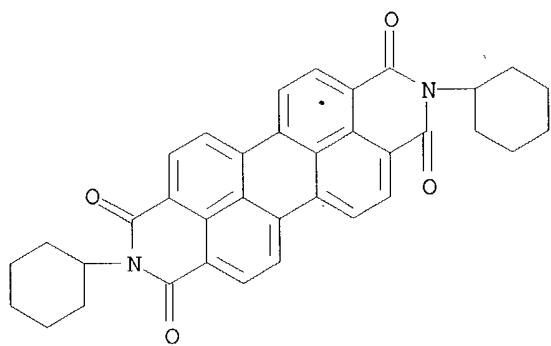
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
2,9-dimethyl- (9CI) (CA INDEX NAME)



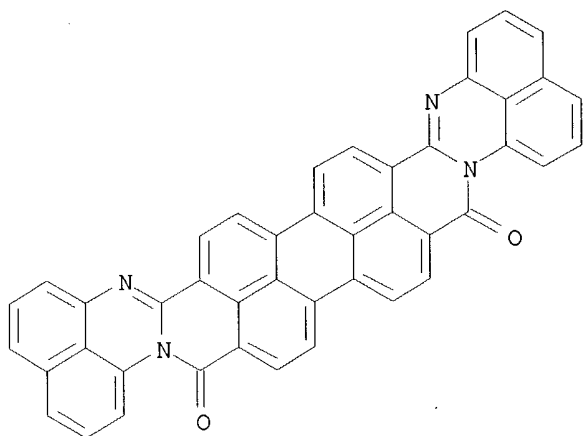
RN 6424-77-7 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



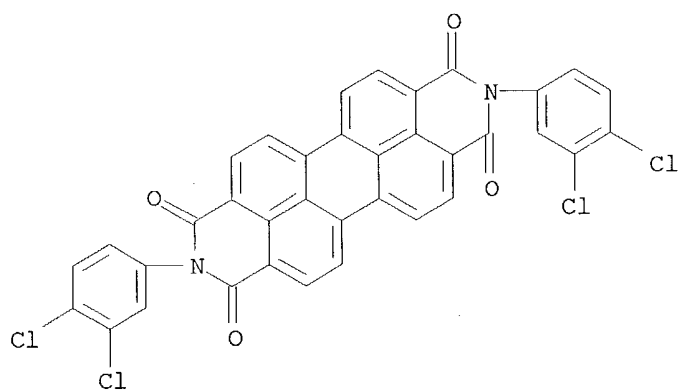
RN 41572-86-5 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-dicyclohexyl- (9CI) (CA INDEX NAME)



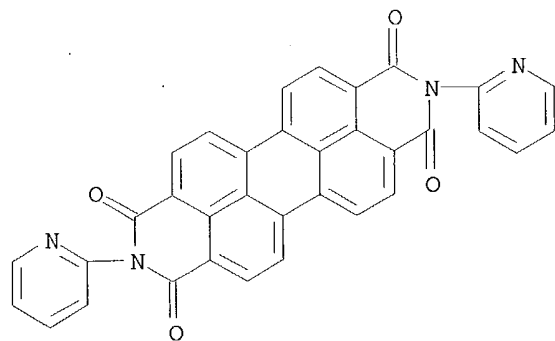
RN 41635-87-4 HCA
 CN Phenanthro[2'',1'',10'':4,5,6;7'',8'',9'':4',5',6']diisoquino[2,1-a:2',1'-
 a']diperimidine-8,13-dione (9CI) (CA INDEX NAME)



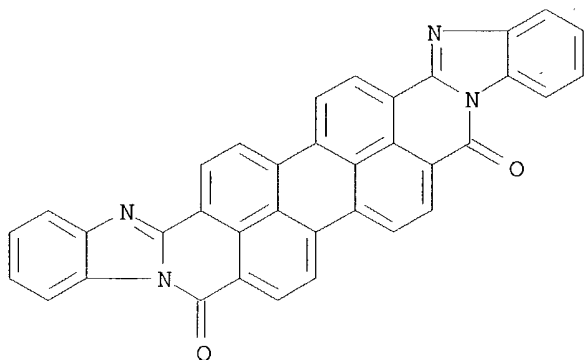
RN 49610-23-3 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-bis(3,4-dichlorophenyl)- (9CI) (CA INDEX NAME)



RN 52000-77-8 HCA
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,
 2,9-di-2-pyridinyl- (9CI) (CA INDEX NAME)



RN 55034-81-6 HCA
 CN Bisbenzimidazo[2,1-a:1',2'-b']anthra[2,1,9-def:6,5,10-
 d'e'f']diisoquinoline-6,11-dione (9CI) (CA INDEX NAME)



IC C07D; C09B; D06P
CC 40-5 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
Section cross-reference(s): 26, 28
IT **128-65-4P 2379-77-3P 5521-31-3P**
6424-77-7P 41572-86-5P 41635-87-4P
49610-23-3P 52000-77-8P 55034-81-6P
RL: IMF (Industrial manufacture); PREP (Preparation)
(dye, preparation of)

=>